

Northward Fill Landfill

Increase in Finished Landform Height Amendment Environmental Impact Statement

Cleanaway Waste Management Pty Ltd

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Executive Summary

Introduction

Cleanaway Waste Management Pty Ltd (Cleanaway) owns and operates the Northward Fill Landfill, also known as the Inkerman Waste Management Facility located at Inkerman, South Australia. The landfill development is subject to a major project declaration under section 46 of the *Development Act 1993* (the Act) and an Environmental Impact Statement (EIS) and various approvals granted under section 48 of the Act. The most recent approval was issued by notice in the South Australian Government Gazette on 4 March 2010 (Approval).

Cleanaway is proposing to raise the approved finished landform height of the landfill. The landform height is the final height of the landfill following waste deposition, settlement and capping. This change will increase the capacity of the landfill, without increasing its physical footprint. This document has been prepared as an amendment to the EIS under section 47(1)(c) of the Act to take into account the proposed alteration to the original proposal by the landform variation.

Cleanaway proposes to increase the maximum landfill landform height from 27 m AHD (Australian Height Datum) to 32 m AHD, as nominated in condition 12 of the Approval. The height increase will apply to future landfill stages and those not already closed and capped in accordance with Environment Protection Authority (EPA) approvals. Capped and closed stages will be unaffected by the height increase, however all finished landform contours will continue to resemble the rolling dunes which characterise the area.

The proposed landform amendment will increase the airspace capacity of the site from approximately 17 million cubic metres to approximately 23.7 million cubic metres for waste disposal, without increasing the footprint of the site and without making significant alteration to the aesthetics of the finished landform. This amendment will improve the efficiency of operations at the site while managing environmental risks by continuing the existing control measures currently required by the Landfill Environment Management Plan (LEMP) for the facility.

To maintain ongoing compliance with EPA requirements and development consent requirements, Cleanaway applies a range of environment management, mitigation and monitoring measures identified in the LEMP and approved by the EPA. These measures and the adopted landfill design have the capacity to manage and mitigate environmental risks associated with increasing the landfill capacity at the site. The proposal is only to vary the finished landform of the site. No deviation or further changes to the Approval are being sought. The design approach to existing and future landfill cells are not subject to change as a result of this amendment, nor is the design approach to capping.

The revised landform design will ensure surface water is managed and visual amenity impact is minimised. This proposal seeks to build upon Cleanaway's record of success in areas of environmental responsibility and management and seeks to ensure the long term future and sustainability of the Northward Fill Landfill operations.

1 Introduction

1.1 Background

Cleanaway Waste Management Ltd (Cleanaway) operates and manages the Northward Fill Landfill operations. The site is located at Inkerman, approximately 85 km north-west of Adelaide. The site is located within the Wakefield Regional Council area. Refer to Appendix A for a site locality figure.

The Northward Fill Landfill is a facility which provides for the waste disposal needs of a significant proportion of metropolitan and regional South Australian households and businesses. The initial proposal to develop this facility was declared on 4 August 1995 to be a major development by the then Minister for Housing, Urban Development and Local Government Relations under section 46 of the *Development Act 1993* (the Act). After an Environmental Impact Assessment (EIA) process which commenced in 1995, Approval was granted by the Governor of South Australia on 21 January 1999 under section 48 of the Act.

The Environment Protection Authority (EPA) issued an Authorisation in the form of EPA Licence 14463 for the activity of "Waste or Recycling Depot" in 2001. The first stage of the site was subsequently constructed and commissioned in 2004. Since this time, 7 amendments to the development authorisation have been granted under section 47 of the Act by the Development Assessment Commission (DAC) as a delegate of the Governor and 1 amendment has been granted by the Governor. The amendment granted by the Governor occurred in 2009 following a review of the Environmental Impact Statement (EIS) which permitted the ongoing receipt of low level contaminated waste at the facility.

Cleanaway proposes a further amendment to the landfill project and the variation of a condition on the Approval to allow an increase in the height of the landform. This report is prepared as an amendment to the EIS and should be read in conjunction with the existing EIS.

1.2 Environmental Impact Assessment procedures

On 7 November 1995 the original EIS for the development was published in accordance with section 46 of the Act. Subsequently, the Minister prepared an Assessment Report in accordance with this section. On 21 January 1999 the Governor gave notice in the Government Gazette that pursuant to section 48 of the Act, a development authorisation was granted to the development, subject to conditions specified in that notice. The development was the subject of further applications to amend the development authorisation and associated amendments to the EIS were made under section 47 of the Act.

Variations to the development authorisation were granted by the DAC as delegate of the Governor on 17 June 2004, 14 October 2004, 13 April 2006, 20 September 2007 and 5 June 2008. On 20 August 2009 the Governor approved an amendment to the development authorisation to allow the receipt of low level contaminated waste at the approved landfill and disposal of these wastes into cells that are separate from those currently used to dispose of solid wastes. The amendment was the subject of an Amended Environmental Impact Statement and an Amendment to the Assessment Report under section 47 of the Act.

Two further variations related to the receipt and disposal of non-metropolitan construction and demolition waste that is not required to go through a waste recovery and waste transfer facility; and an updated design of the liner system for low level contaminated waste cells were granted by the DAC, as delegate of the Governor, under section 48 of the Act by notice in the Government Gazette on 4 March 2010. That notice consolidated the variations and conditions on the approvals as they had occurred since 1999. The notice constitutes the current Approval for the development.

Condition 12 of the Approval states:

"12. The maximum height of the landfill including rehabilitation shall be restricted to 27 m AHD (generally 7 m above the existing natural surface) to be consistent with the existing maximum topographic levels in the region."

Cleanaway wishes to vary that condition to allow the maximum height to reach 32m AHD.

To vary a major development and the conditions on the Approval, a variation application and an amendment to the EIS and Assessment Report is required under section 47(1)(c) of the Act.

The public consultation and response process under section 47(2) of the Act will follow. The State Commission Assessment Panel (SCAP) (as delegate of the Governor) will then consider this amendment to the EIS, a further Assessment Report and determine the application under section 48 of the Act.

1.3 The Proponent

The owner and EPA licensee of the Northward Fill Landfill is Cleanaway Waste Management Ltd. Cleanaway is a leading Australian waste management company, providing total waste management, industrial and environmental services. Following a number of company evolutions from as early as 1875, Cleanaway is now listed on the Australian Stock Exchange (ASX), (ASX:CWY) and services millions of Australian customers across the entire country. Cleanaway employs over 6,000 staff and is committed to waste minimisation, sustainability and industry best practice.

Industry Leader and Best Practice

Cleanaway's activities are centred around sustainability principles. This includes a range of initiatives including education efforts focussed on children on the importance of waste separation and recycling, and to working with customers and communities on finding innovative ways to recover more usable resources from waste. Increasing the finished landform height at the Northward Fill Landfill is also another way Cleanaway intends to support sustainability principles which are identified in this document.

The Northward Fill Landfill has been constructed and operates in accordance with contemporary engineering and environmental standards. Simply meeting the minimum standards may achieve compliance, but Cleanaway strives to exceed to ensure landfill practices are the best in Australia and in line with sustainability principles and expectations. This has been recognised on several occasions by the Waste Management Association of Australia, the peak national body representing the waste management industry. Cleanaway's most recent award for the Northward Fill Landfill came in 2016 with the presentation of the National Landfill Excellence award.

1.4 Proposal Overview

The proposal to increase the finished landform height at the Northward Fill Landfill will enable the facility to create additional airspace without expanding the physical footprint of the site. This improves the operational efficiency of the landfill, reduces the frequency of landfill cell construction and reduces the consumption of land for this purpose resulting in deferred acquisition of a new greenfield site. The site will continue to implement industry best practice design and operation methods.

Although the waste disposal capacity of the site will increase, the frequency and volumes of waste received at the site are unlikely to change. The net effect is an increase in lifespan of the existing approved landfill volume so the facility can continue to provide a waste disposal option for South Australian consumers further into the future. No other deviation or further changes to the Approval is sought. Designs of future landfill cells are not subject to change as a result of this amendment, nor is the design approach to capping.

This document details how the proposal to increase the finished landform meets planning and EPA requirements by detailing the design of the increased landform, its interface with existing closed landfill stages, environmental management, mitigation and monitoring measures and assessment against South Australian state and local development frameworks.

2 Subject Site and Authorisations

2.1 The Site and Current Land Use

The variation in landform height is proposed to occur at the Northward Fill Landfill facility located approximately 85 km north-west of Adelaide, at Inkerman, South Australia. The facility operates pursuant to the Approval, EPA licence 14463 and a Landfill Environment Management Plan (LEMP). The location of the site is provided in Appendix A and is accessed from Primes Road which intersects with Port Wakefield Road.

Certificates of Title are presented in Appendix B and include:

- Allotment 9 in Deposited Plan 32395; Certificate of Title: Volume 5974 Folio 868.
- Sections 390 and 393; Certificate of Title: Volume 5974 Folio 869.
- Allotment 57 in Deposited Plan 34319; Certificate of Title: Volume 5417 Folio 367.
- Allotment 11 in Deposited Plan 45788; Certificate of Title: Volume 5401 Folio 336.
- Allotment 58 in Deposited Plan 34319; Certificate of Title: Volume 5417 Folio 364.

The site is serviced by electricity, mains water, telephone and wireless communications. Sewage is managed onsite using wastewater management systems in accordance with South Australian Health requirements, an amenities facility is provided for staff, an administration block including a gatehouse is located adjacent to the weighbridge and a fully equipped workshop is maintained onsite. The site is secured by lockable access gates and access from Primes Road is sealed. The sealed road extends into the site beyond the weighbridge where it links with the wheel wash facility. At this point it becomes an unsealed all weather road joining the network of internal access and haul roads.

Land at the site not currently utilised for landfilling and associated site operations is routinely cropped by a local share farmer. Adjacent landuses include livestock grazing, cereal cropping and intensive animal keeping. The nearest residence is approximately 500 m from the southern edge of the landfill disposal area, while three other residences are approximately 830 m, 1,030 m, and 1,500 m from the site. A Mineral Lease is located on the northern property boundary and agricultural activities occur within 1 kilometre of site boundaries.

2.2 Development Authorisations and Environment Protection Authority Licence

In addition to the Approval under the Act, the facility is subject to a licence issued by the EPA (Licence 14463) pursuant to section 40 of the *Environment Protection Act 1993* for the activity prescribed in Schedule 1, Part A clause 3(3) of that Act of "Waste or Recycling Depot." A copy of this licence is provided in Appendix C.

2.3 Current Facilities and Operations

The Northward Fill Landfill is a facility which fulfils community waste management and disposal needs, but is also a necessary link in Cleanaway's waste management pathway. Waste received at the site typically comprises of residual material remaining after the waste is subjected to offsite resource recovery processes. Management of waste in accordance with the waste hierarchy (Figure 2.1) includes disposal of residual waste to landfill which is integral to the overall management of South Australia's waste stream. Examples of waste received at the Northward Fill Landfill includes the receipt of residues from Cleanaway's Liquid Waste Treatment Plant and the network of waste transfer stations located in metropolitan and regional South Australia. The site is not open to the public for waste deposition.

Since 2004, the site has been actively landfilling waste. Stages 1 and 2 of the site are closed and capped in accordance with an EPA approved capping plan. The style of cap is a phytocap, whereby vegetation growth is supported to minimise leachate generation and fugitive landfill gas

emissions while creating a physical barrier between the cap surface and deposited waste. Stages 3, 4 and 5 are not formerly capped, although interim cover has been applied and Stage 6 is the active landfill stage. Stages 3, 4, 5, 6 and future stages will be subject to the landform height increase. It will not apply to Stages 1 and 2 at the site.

Further detail in relation to the design and operation of landfill cells at the site is provided in the facility LEMP.



Figure 2.1 Waste Management Hierarchy (Source: Green Industries SA)

3 The Proposal

3.1 Proposal Rationale

The Northward Fill Landfill provides a safe, orderly and EPA compliant waste disposal service for South Australians. The increase in finished landform within the approved footprint of the site will take advantage of existing operational controls and environment management measures already in place.

Cleanaway proposes to increase the maximum landfill landform height at its peak from 27 m AHD to 32 m AHD post settlement. Post settlement refers to the period after which the deposited waste has settled. The revised landform height will provide for additional airspace and waste placement within the existing approved landfill footprint. When comparing the volume of waste forecast to be managed in the current design against the proposed design, outcomes include:

- Optimises overall landfill footprint area; i.e. more effective use of this area.
- No increase to environmental impact as environmental management and baseliner practices have the capacity to continue to minimise potential impacts.
- Improved financial performance is expected to improve the ability of the facility to continue to meet best-practice into the future as environmental protection and monitoring requirements change.
- Reduces frequency of cell design and construction works which also reduces potential community disturbance due to earthworks.
- Secures the long term future of this facility as a community and state asset.
- Ensures market competition is maintained for waste disposal services in South Australia.

3.2 Consequences of Not Proceeding

Should the development not proceed, the Northward Fill Landfill may not realise the operational and site utilisation efficiencies required to meet Cleanaway's environmental sustainability goals. In addition, this will be a missed opportunity to gain environmental and economic efficiencies by increasing the site capacity while reducing the footprint consumption rate and landfill cell construction frequency without changing to the existing environmental impact. The finished landform increase also supports Cleanaway's business model for the long term operation of the site.

3.3 Design Aspects

The increase in landform height from 27 m AHD to 32 m AHD has been designed in the context of the existing landfill footprint and final capping contours. Design drawings are included in Appendix D. The following considerations have been considered in the design:

- The maximum post settlement cap height increase is 5 m AHD, resulting in a maximum expected post-settlement landform height of 32 m AHD.
- Surface valleys and crests in the finished landform will remain in the same locations as previously approved to remain consistent with landform features identified in the original EIS.
- The landfill landform surface grades will be revised from the existing design to continue to achieve surface valleys and crests of the rolling dunes which characterise the area, consistent with existing approvals.
- The predicted minimum long term settlement of 10% throughout the waste mass is assumed and currently agreed with the EPA.

- The interface of the proposed landform with the existing landform on Stage 2 will continue at a gentle grade of approximately 1:8.
- Stage 1 and 2 of the landfill are capped and closed. These capped areas will not be re-opened to waste placement and are not subject to the increased landform height.
- Cleanaway remains committed to capping the remaining uncapped areas in accordance with existing approved methodology – i.e. phytocapping as per Stage 1 and 2.
- Cleanaway will perform post closure monitoring of levels and grades over the top of mounds to ensure any differential settlement doesn't create areas of ponding.
- Maintenance will be undertaken to fill low spots and maintain design grades (if required) on an as needs basis.

3.4 Stakeholder Consultation

Community

Cleanaway values engagement with its local community and facilitates a Local Community Consultative Committee (LCCC) in relation to the Northward Fill Landfill facility. The LCCC routinely meet at the site and during the December 2017 meeting, the proposal to increase the finished landform height for the landfill was presented. A large number of local residents attended which provided the community an opportunity to engage with Cleanaway staff and the design engineers regarding the proposal. Concept design drawings and visual amenity viewshed analysis figures (refer Appendix D and E) were presented and discussed in detail. Minutes from this meeting are attached in Appendix F.

The community was also invited to provide written submissions following the meeting. Of the submissions received, none raised issues directly related to the increased landform height. Copies of submissions are included in Appendix F. It is understood the community will have another opportunity to provide formal comment on the development proposal during a 3-week period of public consultation during the development assessment process.

Wakefield Regional Council

In late 2017, the proposal was presented to senior management and the Chief Executive Officer of the Wakefield Regional Council via Council's meeting agenda items; it was also presented to the elected member body. Responses were received from the Chief Executive Officer, Jason Kuchel in December 2017 which did not object to the proposed increased landform. In addition, the Council will be invited to provide formal comment as a referral agency during the development assessment process.

Environment Protection Authority (EPA) and Department of Planning, Transport and Infrastructure (DPTI)

During 2017, the EPA and DPTI were approached and the option to increase the finished landfill landform height was discussed. Tania Kiley, Principal Advisor Waste Management at the EPA and Lee Webb, Senior Specialist (Environmental) Planner from the development division of DPTI provided advice. While the agencies understood the proposal, advice was provided in relation to the approvals pathway which is being followed. The State Commission Assessment Panel (SCAP) within DPTI is the development assessment authority for this proposal and the EPA will be invited to provide formal comment as a referral agency during the development assessment process.

4 Environmental Management, Mitigation and Monitoring

4.1 Landfill Environment Management Plan (LEMP)

The LEMP is an EPA licence requirement and provides the framework for the management and mitigation of environmental impacts during construction, operation and closure of the landfill, and for the post-closure period. As stated earlier in this document, the Northward Fill Landfill facility is operated in accordance with the EPA approved LEMP. The LEMP is reviewed and updated periodically to capture changes to site circumstances, legislative revisions and new technology or innovations. The LEMP demonstrates Cleanaway's ongoing commitment to best practice and continuous improvement.

The approved LEMP includes the following aspects:

- Operational Details.
- Environmental Management Systems.
- Stormwater and Erosion Management.
- Groundwater and Leachate Management.
- Landfill Gas Management.
- Noise Management.
- Dust and Mud Management.
- Odour Management.
- Litter Management.
- Visual Impacts and Revegetation Management.
- Fire Risk Management.
- Aboriginal Heritage Management.
- Closure and Post Closure.

Cleanaway is proposing to update the LEMP for EPA approval to incorporate this design change once it is approved. Operational and environment management measures are not subject to change as they will not be influenced by the height increase. The key environmental risk identified relates to visual amenity. The nearest residence is located at least 500 m from the landfill disposal area. Cleanaway's commitment to continue perimeter vegetative planting and maintenance for screening purposes and capping using phytocapping, which incorporates native shrubs and grasses). The sight distance combined with the vegetation plantings result in the risk of visual amenity impact on off-site locations being low.

The buffer distance to residences is unchanged and hence remains adequate to mitigate against other environmental risks resulting from the existing operations including odour, noise and dust. Existing monitoring programs for groundwater and landfill gas also manage potential environmental risks. The following sections provide information on the existing environment, followed by the existing management measures which will continue to be applied in relation to the landform height increase.

Considering the potential impacts and their mitigation measures, the proposal to increase the finished landfill landform will not increase impacts to the receiving environment including residential receptors.

4.2 Environmental Context

Underpinning the aspects identified in the LEMP are a range of environmental issues. Addressed by the LEMP, the following section provides the environmental context of the facility.

4.2.1 Local Topography and Landuses

The current visual appearance of the site is one of undulating land broken by sand dunes, which rise to RL (relative level) 20, i.e. 20 m above Sea Level, or approximately 10 m above the natural ground level adjacent to Port Wakefield Road. Further to the east of the site, these dunes present themselves to a height of RL 25, providing an irregular raised profile. The dunes are not cultivated but are vegetated with scattered native trees and some native grasses. The surrounding fields, where planted, exhibit as cereal crop farmland, and vary in appearance as the seasons prevail from the mid-winter green crops to yellow summer stubble to bare earth. The area adjacent to the Port Wakefield Road, abutting the western boundary of the site, has significant native vegetation and tree and shrub plantings in place which acts as a buffer to the traffic.

4.2.2 Geology

The Adelaide 1:250,000 geological map sheet indicates that the geology of the site consists of aeolian Fulham Sand and possibly Molineaux Sand (dunefield sands) underlain by (possibly) aeolian calcareous sand of the Woorinen Formation and Bakara Soil/Ripon Calcrete. Beneath these surficial deposits is a substantial thickness of Hindmarsh Clay, described as grey and red-brown mottled sandy clay (MESA, 1969). These sediments plus the underlying Tertiary age units are known as the St Vincent Basin.

The uppermost Tertiary unit in the St Vincent Basin in this area is the Port Willunga Formation (MESA, 1995), which consists of fossiliferous sandy limestones, sands and sandstones. It is underlain by siltstones and limestones of the Blanche Point Formation (MESA, 1983), which in turn is underlain by sands, clays and coal seams of the South Maslin Sands, Clinton Formation, and North Maslin Sands (MESA, 1969).

Aquifers within these sediments include thin sand or gravel beds within the Hindmarsh Clay, the uppermost Tertiary aquifer within the North Maslin Sands and South Maslin Sands. In the Inkerman area, the salinity of groundwater is generally in excess of 6000 mg/L in both Tertiary and Quaternary aquifers and is therefore not used for irrigation.

4.2.3 Hydrogeology

The site is located in an area with an average annual rainfall of 331 mm and pan evaporation of 1,820 mm, measured at the Port Wakefield Post Office and Price (Ocean Salt) respectively. Most rainfall occurs in the winter months.

The site does not function as a typical catchment. There are no defined flow paths discharging to receiving waters. The nearest river, River Wakefield, lies 15 km to the north of the site. Rainfall infiltrates into the sandy surface soils with no runoff. The landform is generated by wind erosion rather than water erosion. There are many entrapped low spots between the dunes, and in some the underlying Hindmarsh Clay is exposed as a claypan. These shallow claypans occasionally contain shallow water due to direct precipitation and some seepage from the adjacent dunes. The presence of calcrete within the soil profile indicates a nett upward movement of water in this environment in the longer term.

4.2.4 Groundwater

Groundwater in the vicinity of the site has been previously documented in the original EIS report (Path Line Pty Ltd and Maunsell, 1998). That report outlined that the groundwater flows in a general north-westerly direction. As part of the original EIS (*ibid*), a groundwater flow model was constructed to investigate the movement of water from the site to Gulf St Vincent. The model

indicated that it would take tens of thousands to millions of years for groundwater to flow from the site to the sea at Gulf St Vincent. This information was used to determine that the pollution potential of the site to the marine environment is low.

4.2.5 Wind

Winds are predominantly from the south and south-west during summer and the north and north-east during winter. Wind direction and the proposed final landfill landform height increase informs Cleanaway's approach to litter management which is addressed in Section 4.3.7

4.3 Environmental Management, Mitigation and Monitoring Measures

4.3.1 Stormwater and Erosion

The LEMP includes the management of stormwater and erosion in section "EMM 02 Stormwater and Erosion Management". The measures in the LEMP account for regulatory requirements, site characteristics, industry best practice, the potential for unusual events and acknowledgment of longer term environmental considerations.

The systems which are used at the landfill site to control and contain stormwater include:

- Separation of contaminated and uncontaminated surface water flows.
- Storage of runoff from capped areas.
- Removal of sediment from runoff from capped and stockpile areas.
- Protection of soil from wind and water erosion.

In relation to the increased finished landform, the management measures identified are adequate to manage stormwater and erosion risk. They will apply to all activities associated with achieving the finished landform height increase.

4.3.2 Leachate Management and Groundwater Protection

The LEMP includes the management of leachate and groundwater in section "EMM 03 Leachate Management and Groundwater Protection". Key to the protection of groundwater at the site is the implementation of surface water control measures (refer section 4.3.1), the design and construction of lined landfill cells with leachate collection systems, a groundwater monitoring program and a leachate monitoring program.

Each of these measures are implemented at the site. Their adoption will continue into the future, including the monitoring and reporting of groundwater, surface water and leachate quality from the network of groundwater wells, surface water ponds and leachate ponds. The EPA will continue to be provided technical specifications, design drawings and construction quality assurance plans for approval prior to construction of future landfill cells and caps.

Cleanaway will continue to implement systems of construction quality assurance and reporting to ensure approved designs are constructed in accordance with their technical specifications to the satisfaction of third party engineers, Cleanaway and the EPA.

Groundwater, surface water and leachate continues to be monitored in accordance with the LEMP and results to date have not revealed concerns in relation to environmental impacts. In relation to the increased finished landform, the management measures identified are adequate to manage leachate and groundwater protection. They will apply to all activities associated with achieving the finished landform height increase.

4.3.3 Landfill Gas

The LEMP includes the management of landfill gas in section "EMM 04 Landfill Gas Management". A landfill gas risk assessment has been prepared for the site which supports the landfill gas monitoring program. A landfill gas management system has been implemented at the

site which captures and flares gas. This system is expanded as the landfill expands. Monitoring of a network of landfill gas wells, site infrastructure and surfaces is routinely undertaken. This assesses the potential for off-site landfill gas migration or unacceptable onsite concentrations.

Landfill gas continues to be monitored at surface locations and landfill gas wells, including those on the site boundaries in accordance with the EPA approved Landfill Gas Monitoring and Management Plan (Tonkin, 2012). Results to date have not revealed concerns in relation to environmental impacts.

In relation to the increased finished landform, the management measures identified are adequate to manage landfill gas. They will apply to all activities associated with achieving the finished landform height increase.

4.3.4 Noise

The LEMP includes the management of noise in section “EMM 05 Noise Management”. There are a number of potential sources of noise at the facility, such as traffic noise from vehicles entering and exiting the facility, activities in the transfer station, site preparation for landfilling, including excavation and earthworks to form basin and batter slopes, landfill activities (placement of waste), and by restoration activities.

Noise control measures include the limiting the speed of vehicles onsite, site opening and operational hours, plant and equipment maintenance and the onsite noise attenuation mound. The objective of noise management measures is to meet regulatory requirements, thereby ensure that there is no health risk or loss of amenity to the surrounding land users due to the design, management, operation and post-closure activities onsite.

Increasing the landfill finished landform height will not increase noise risk, therefore existing management measures are adequate and will apply to all activities associated with achieving the finished landform height increase.

4.3.5 Dust and Mud

The LEMP includes the management of dust and mud in section “EMM 06 Dust and Mud Management”. Dust is potentially generated by vehicle activities during construction of the facility and by vehicles entering and exiting the facility. Mud is potentially deposited on Primes Road and Port Wakefield Road by long haul vehicles exiting the site.

Dust and mud control measures include requirements of site traffic to use defined site access roads, limiting the speed of vehicles onsite, using water carts to suppress dust and use of the wheel wash as vehicles leave site. The objective of this strategy is to meet regulatory requirements, thereby ensuring there is no health risk or loss of amenity to the surrounding land users due to the design, management, operation and post-closure activities onsite.

Increasing the landfill finished landform height will not increase the risk of dust and mud impacts, therefore existing management measures are adequate and will apply to all activities associated with achieving the finished landform height increase.

4.3.6 Odour

The LEMP includes strategies to manage odour in section “EMM 07 Odour Management”. Potential odour sources include vehicles carrying waste, landfill operations, the leachate ponds, and from restored areas. To mitigate odour, Cleanaway takes steps to minimise and adjust the size of the active tipping face based on the characteristics of the waste being deposited. The established landfill gas management network of wells and flare also reduces the odour potential at the site.

The objective of this strategy is to meet regulatory requirements, thereby ensuring there is no health risk or loss of amenity to the surrounding land users due to the design, management, operation and post-closure activities onsite.

Increasing the landfill finished landform height will not increase odour risk, therefore existing management measures are adequate and will apply to all activities associated with achieving the finished landform height increase.

4.3.7 Litter Management

The LEMP includes strategies to manage litter issues in section “EMM 08 – Litter Management. The potential for litter generation is minimised through the active management of the tipping face and method of waste deposition. Incoming loads are covered and the tipping face is generally located where it is screened from wind. Cover material is also placed on deposited waste to prevent it becoming wind-blown and the size of the tipping face is maintained at a minimum practical size to reduce the surface area potentially accessible to winds.

Further control measures include the current use of the litter fencing (under trial), which is intended to act as a containment system surrounding the tipping face. The trial involves the placement of a fencing system around the tipping face which can be easily accessed for cleaning. The trial remains ongoing and if successful will be implemented and used for all future waste deposition activities.

These litter control measures will continue to be applied given the increase in landform height and potential for wind-blown litter. As a commitment to continuous improvement, Cleanaway will continue to monitor and adjust litter control measures to ensure their ongoing effectiveness. Site perimeter fencing, regular litter patrols both on and off-site and weather monitoring informs site operations such that the potential for litter generation is minimised.

In relation to the increased finished landform, the management measures identified are adequate to manage litter risk. They will apply to all activities associated with achieving the finished landform height increase.

4.3.8 Visual Impact, Pest Plants and Animals

The LEMP includes strategies to manage visual impact and revegetation issues in section “EMM 09 – Visual Impact and Revegetation”. This includes vegetation planting on perimeter boundaries and weed and pest control strategies. The objective of this strategy is to meet regulatory requirements, thereby ensuring there is no health risk or loss of amenity to the surrounding land users due to the design, management, operation and post-closure activities onsite.

In addition, a viewshed analysis has been undertaken to understand the potential visual impact of the height increase on the viewshed from 4 locations surrounding the site. The visual impact appears low in the context of the existing approved facility and is barely noticeable from perimeter locations. The viewshed analysis figures are presented in Appendix E.

As a further safeguard, Cleanaway is committed to additional perimeter vegetative planting and maintenance for visual screening purposes. Although the current visual pathways from frequented areas to the landfill are vegetated, planting will be increased as will the density of vegetation in these areas. A key location where this will occur is the visual pathway from Inkerman Road. Cleanaway will continue to liaise with local residents in relation to these efforts.

The phytocapping approach used by Cleanaway at the site also includes the planting and maintenance of native shrubs on capped surfaces. Evidenced by the vegetation present on Stages 1 and 2, future stages when closed, will be similarly vegetated which will mitigate potential visual amenity impacts. Pest plants, including weeds will be monitored and subject to control programs which include site inspections, spraying and removal.

Risks associated with pest animals and vermin is mitigated through the existence of perimeter fencing, operating procedures which minimise the size of the active tipping face, placement of cover material over deposited waste and the use of fencing around the tip face. Together, these measures are effective in the management of pest animals and vermin.

In relation to the increased finished landform, the measures identified are adequate to manage visual impact, pest plants and animal risks. They will apply to all activities associated with achieving the finished landform height increase.

4.3.9 Fire Risk

The LEMP includes strategies to manage fire risk in section “EMM 10 – Fire Risk Management”. The objective of this strategy is to meet regulatory requirements, thereby ensuring there is no health risk or loss of amenity to the surrounding land users due to the design, management, operation and post-closure activities onsite.

Control measures include the prohibition of onsite burning, maintaining a water cart, water supply and earthmoving equipment onsite for firefighting purposes and ongoing vegetation inspection and maintenance to reduce potential fuel loads and to ensure access for emergency vehicles.

Increasing the landfill finished landform height will not increase fire risk, therefore existing management measures are adequate and will apply to all activities associated with achieving the finished landform height increase.

4.4 Landfill Closure and Post Closure

Details regarding landfill closure and post closure management are included within the LEMP. Landfill capping plans will be developed when required to address landfill stages as they close. These capping plans will be provided to the EPA for approval prior to implementation.

Prior to the closure of the entire landfill footprint following extinction of all approved available airspace, a landfill closure plan will be prepared and will replace the LEMP.

5 Planning Assessment

The subject land is located within a Primary Industry Zone of the Wakefield Regional Development Plan (consolidated 9 February 2017). Since the time of the initial EIS and subsequent amendments, Council's Development Plan has been updated and this assessment considers the most recent consolidation of the Development Plan. Overarching the Development Plan is the State Planning Strategy – the 30-Year Plan for Greater Adelaide and the South Australian Strategic Plan. Assessment of this development proposal is in the context of these plans, the Yorke Peninsula Regional Landuse Framework, Environment Protection Authority (EPA) and Green Industries SA (GISA) considerations.

Issues related to whether the site is suitable for waste disposal were addressed during the initial EIS development and approval process which concluded in 1999. This information was assessed by relevant stakeholders, including the EPA, Wakefield Regional Council and the Governor. The proposal to increase the finished landform height builds upon this existing information and the initial development authorisation outcomes. The EPA's *Waste to Resources Environment Protection Policy 2010* has been introduced since the last development approval was granted for the Northward Fill Landfill in 2010. It is therefore addressed in this section.

5.1 Planning Strategy

South Australia's 30-Year Plan for Greater Adelaide, first released in 2010 was updated in 2017. A set of 14 principles were developed to shape the key policies and actions to deliver the vision which includes a pronounced shift away from continuing our urban sprawl to building a more liveable, competitive and sustainable region. The 14 principles of the plan are:

1. *A compact and carbon neutral city.*
2. *Housing diversity and choice.*
3. *Accessibility.*
4. *A transit focussed and connected city.*
5. *World-class design and vibrancy.*
6. *Social inclusion and fairness.*
7. *Heritage and character protection.*
8. *Health, safe and connected communities.*
9. *Affordance living.*
10. *Economic growth and competitiveness.*
11. *Climate change resilience.*
12. *Environment protection, restoration and enhancement.*
13. *Natural resource management.*
14. *Better community engagement.*

Underlying these principles is a series of policies and actions. Of the policies and actions, those related to infrastructure are relevant to this proposal. The following policies and actions have been considered:

- **A49.** *Develop Planning and Design Code policies that protect buffer distances, duplication requirements and operational requirements of strategic infrastructure, such as major ports, mining operations, waste water treatment or waste management facilities.*
- **A52.** *Deliver long-term planning for waste and resource recovery infrastructure to identify locations to meet the future demand and support a resource efficient economy.*

The proposal to increase the finished landform height supports these provisions from not only an environmental perspective, but also from long term waste and resource recovery infrastructure planning perspectives. The height increase will secure the long term future of the Northward Fill Landfill which continues to fulfil a critical role in the South Australian waste management market while minimising environmental impact.

5.2 The Development Plan

The relevant development plan is the Wakefield Regional Council Development Plan, consolidated 9 February 2017. The plan includes relevant Council-wide and Primary Production Zone specific objectives and principles of development control. The operation of the existing facility is consistent with these considerations, including, but not limited to, those discussed below.

As this proposal will merely increase the capacity of an existing approved and licenced site, its potential to cause detriment is extremely minimal. As demonstrated below in terms of the key themes relating to waste management facilities, the proposal supports the objectives and principles in the Development Plan.

1. Visual Impact

Visual amenity will continue to be preserved due to the minimal nature of the proposed height increase relative to the distances between the site and its boundaries. As visible in Appendix E, the proposed increase to the height of the landfill cells will be slightly visible when viewed from the adjacent roads. The visual impact as compared between the existing cap design and the proposed cap design is low. In the context of the existing approval for a 27 m AHD high landform, the increase by an incremental 5m will have a minimal visual impact on the site and the amenity of the locality. The general form of the finished landform contour design will be revised, but will continue to resemble the rolling dunes which characterise the area. This is consistent with the design outcomes developed during the the initial EIS which were subsequently assessed and approved.

Primary Production Zone Objective 3 envisages the:

Protection of primary production from encroachment by incompatible land uses and protection of scenic qualities of rural landscapes.

Insofar as the proposal does impact the rural landscape, the impact will be further minimised by the existence of ample vegetation that currently screens the landfill from view. This approach to protecting amenity is supported by Principle of Development Control (PDC) 8 of the Council wide provisions relating to the location of Waste Management Facilities, which states that:

Landscaping should be provided to screen views of the processing facilities and operational areas.

While the existing vegetation will sufficiently screen the increased height from view at most locations around the site, further native vegetation will be progressively planted with capping works to mitigate any visual or amenity impact.

2. Land use and siting

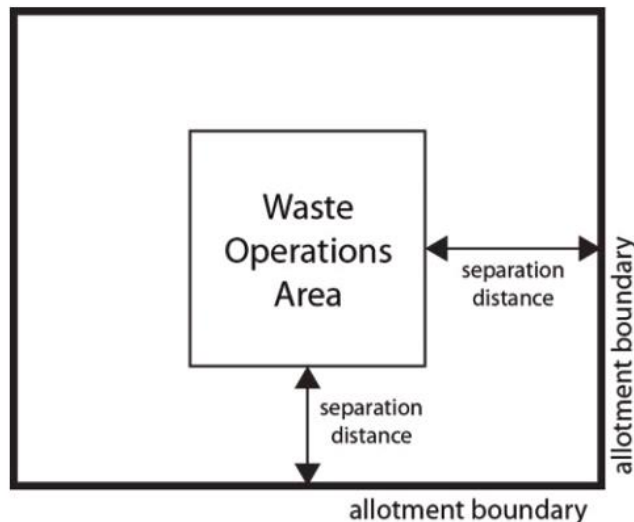
PDCs 1-4 of the Council-wide provisions relating to the location of Waste Management Facilities state:

Waste management facilities should be located and designed to minimise adverse impacts on both the site and surrounding areas from the generation of surface water and groundwater pollution, traffic, noise, odours, dust, vermin, weeds, litter, gas and visual impact.

Waste management facilities in the form of land fill and organic processing facilities should not be located in existing or future township, living, residential, centre, office, business, institutional or environmental protection, conservation, landscape, water protection and open space areas.

Waste management facilities should not be located where access to the facility requires, or is likely to involve, the use of non-arterial roads in adjacent residential areas.

Waste management facilities should be appropriately separated from sensitive land uses and environmentally-sensitive areas. The separation distance between the waste operations area and sensitive uses should be incorporated within the development site as illustrated in the figure below. The waste operations area includes all closed, operating and future cells.



Appropriate buffers as in the diagram above were installed with the landfill and have been maintained to date. The nearest residence is located at least 500m from the landfill disposal area, meaning that surrounding residents are not affected by dust or odours from the site. This is further supported with appropriate mitigating strategies, including covering waste with soil, controlled application of water and monitoring air emissions. These measures fulfil preventative requirements in relation to air quality and will be maintained following implementation of this proposal.

As referred to above, Primary Production Zone Objective 3 envisages the:

Protection of primary production from encroachment by incompatible land uses and protection of scenic qualities of rural landscapes.

The proposal involves increasing the longevity of the existing site and prolonging the capacity of the approved waste depot to receive waste on land that has long been used for a non-agricultural purpose, without requiring any further land to be lost from agricultural use. There are also no changes to the landfill operations, the materials accepted and the site's size and location, resulting in no impact on the surrounding agricultural land use. The proposal also removes the potential for a need to establish a new facility in an alternative location in the Zone, protecting it from further encroachment by non-agricultural land uses.

Primary Production Zone Objection 5 envisages:

Development that contributes to the desired character of the zone.

The Desired Character in the Zone focuses on preserving the agricultural use of the land. As the Zone covers the majority of the Council area, it is reasonable that there would be some land uses further to the predominant agricultural land use within the Zone, provided that use is compatible and does not impact the agricultural integrity of the locality. The proposed height increase to the cells supports the agricultural integrity of the Zone. By expanding capacity upwards instead of outwards, the landfill's capability to manage the region's waste is maintained without expanding the site area into the surrounding agricultural land. Ultimately this proposal seeks to ensure the longevity of the facility and its operation, preventing further landfill development in the locality and preserving the agricultural character of the zone.

3. Traffic

Impact on the traffic and access arrangements related to the site are not expected. The proposal is not seeking to construct additional stages or increase the size of the landfill; rather it seeks to increase the capacity of existing cells so that they can continue to be filled at the existing rate for a longer period. Objective 2(d) of the Council wide provisions relating to Transportation and Access envisages development that:

Is appropriately located so that it supports and makes best use of existing transport facilities and networks.

This objective will be met due to the location of the site on Port Wakefield Road, which is subject to consistently high volumes of traffic and able to facilitate the traffic associated with the landfill. The site's proximity to Port Wakefield Road also supports PDC 9 of the Council wide provisions relating to Waste Management Facilities which envisages that:

Waste management sites should be accessed by appropriately constructed and maintained roads.

PDC 10 of the Council wide provisions relating to Waste Management Facilities with states:

Traffic circulation movements within any waste management site should:

- a) be of a dimension and constructed to support all vehicles transporting waste.*
- b) enable all vehicles to enter and exit the site in a forward direction.*

The existing access arrangements on the site support all vehicles transporting waste, and would not be affected by this proposal, as it does not seek to increase the volume of waste which is accepted by the landfill at any given time.

4. Health and environmental impacts

Objective 2 of the Council wide provisions relating to Waste Management Facilities envisages:

Minimisation of human and environmental health impacts from the location and operation of waste management facilities.

Establishing further capacity for an existing approved waste depot is an appropriate form of development from an environmental perspective, as it does not create any new or additional environmental impacts. The increased capacity will be supported by the established environment protection mechanisms and management strategies and will thus not cause detriment to the environment.

The increased cell height may actually decrease the potential environmental impact. Increasing site capacity upwards rather than outwards means that the landfill footprint does not change. There are also waste management benefits associated with increasing the cell height. Waste compaction and settlement rates may increase due to the increased waste volumes, thus further extending the long-term capacity of the existing landfill site.

The mechanisms and strategies of the landfill's operation, as well as the existing lifespan, closure and post-closure arrangements for the landfill will not be affected by the proposal. As the operation of the landfill will continue exactly as at present, there are no environmental issues associated with this proposal which have not already been adequately investigated and addressed. The design of the facility is to a high standard and appropriate measures are in place that are sufficient to prevent pollution, and environmental harm and minimise risk of contamination to groundwater and surface water.

5. Orderly and Economic Development

Objective 1 of the Council-wide provisions relating to Waste Management Facilities envisages:

The orderly and economic development of waste management facilities in appropriate locations.

Increasing the capacity of the existing landfill site without widening or adding further site area represents sound economic development while achieving the site's maximum efficiency. The proposal capitalises on the comprehensive environmental management regime in place to manage any impacts while improving the efficiency of the landfill and providing greater longer term landfill capacity for the community. The proposal, in simple terms, exemplifies "orderly and economic development", a fundamental desire of the development policy applicable to the site. It does not require further allocation of resources for environmental assessment or protection measures and eliminates the potential necessity to establish a new facility at an alternative location.

5.3 South Australia's Strategic Plan

South Australia's Strategic Plan was first released in 2011 and most recently updated in 2017. The plan is built around the following pillars:

- *Growing prosperity.*
- *Attaining sustainability.*
- *Fostering creativity and innovation.*

The waste management sector makes contribution to each of these pillars in a variety of ways. Green Industries SA (GISA) plays a key role in fostering innovation, encouraging sustainable practices which ultimately supports our prosperity. Cleanaway's implementation of phytocapping at the Northward Fill Landfill is an example of innovation, whereby trials were implemented comparing the growth of grasses with a combination of grasses and shrubs. Cleanaway is a major contributor to South Australia's waste industry and its overall operations are aligned with South Australia's strategic goals. Cleanaway employs a large number of South Australians, which in turn adds to our local economic prosperity.

Cleanaway's commitments to environmental education are combined with its operations which strive to reduce the volume of waste to landfill in accordance with waste diversion targets established by GISA. The increase in landform height is another sustainability effort as it will reduce the rate of land consumption to accommodate the ongoing landfill operations.

5.4 Yorke Peninsula Regional Landuse Framework

The Yorke Peninsula Land Use Framework released in 2007, is an official volume of the Planning Strategy for South Australia. This document is intended to inform Council's review of the Development Plan, but it also serves as an instrument to guide future landuse in the region, including that located within the Wakefield Regional Council jurisdiction. Relevant framework objectives and strategies in this document relevant to the waste management industry are identified below.

Objective 4

Environment protection guidelines and building codes provide guidance on the management of waste, wastewater and stormwater to prevent risk to public and environmental health. Protecting water quality and marine life from the impacts of stormwater, pollution and the release of nutrients is a priority. The emerging understanding of the potential of these waste sources for increasing water supply and as inputs to the recycling industry are also a priority to be considered in planning, including collecting stormwater on site for reuse.

Strategies

- **4.1** *Manage waste in accordance with the principles of reducing, recovering and recycling, by ensuring settlements and developments incorporate appropriate space, facilities, access and construction methods.*
- **4.2** *Manage stormwater to reduce risk of flood and pollution, improve water quality, and maximise opportunities for reuse.*

- **4.3** *Plan for effective wastewater disposal through mains sewer and Community Wastewater Management Systems (CWMS), and maximise reuse opportunities.*
- *See also Economic Development Objective 15 – waste management industry.*
- *Objective 15 relates to the strategic planning for future waste management requirements and to foster the resource recovery industry.*

Objective 15

Waste management facilities are located across the region and include landfills, transfer depots and recycling depots. All of these facilities conduct some degree of waste salvaging (e.g. steel, green waste, oil) to on-sell. The landfill at Everard has been expanded to provide for the safe disposal of animal waste from local piggeries and poultry sheds, and has been identified as a site for future composting/recycling of this waste. Recycling activities contribute to both the regional economy and reducing the amount of waste going into landfill.

A Regional Waste Management Plan is being developed to identify opportunities for improving efficiencies in waste management across the Mid North and Yorke Peninsula. Once finalised the directions of the Plan will be reflected in local Development Plans.

Strategies

- **15.1** *Identify land suitable for waste management and resource recovery facilities to optimise opportunities for re-use and recycling of waste while maximising economic efficiencies, and protect this land from encroachment by sensitive land uses (e.g. housing).*
- **15.2** *Provide for the establishment of facilities in appropriate locations to support new markets/products for recycled materials and animal waste products.*

The Northward Fill Landfill is an existing landfill servicing the Yorke Peninsula region and South Australian communities. It's ongoing operation and the proposal to increase the finished landform height without increasing its footprint broadly supports the above objectives, including those related to economic sustainability. Additionally, waste acceptance requirements including the fact putrescible waste must have been subject to a form of resource recovery prior to disposal also supports these strategies.

5.5 Building Rules

There are no proposed structures that require assessment against the Building Code of Australia for Building Rules consent.

5.6 Environment Protection Act

The existing landfill activity is an activity of major environmental significance pursuant to the *Environment Protection Act 1993*. Ongoing compliance with the *Environment Protection Act 1993* and site licence conditions is required and will be ensured. Cleanaway has a long history of maintaining compliance and also actively supports the objectives of the *Environment Protection Act 1993* which are listed below:

- To promote the principles of ecologically sustainable development.
- To ensure that all reasonable and practicable measures are taken to protect, restore and enhance the quality of the environment having regard to the principles of ecologically sustainable development and to prevent, reduce, minimise and where practicable, eliminate harm to the environment.

To achieve these objectives, the LEMP remains the key instrument which guides site operations and environmental compliance activities. Compliance is monitored by the EPA, but is also assisted by Cleanaway's preparation of annual reports regarding site operations, compliance activities and monitoring outcomes as required by the EPA licence.

5.7 Other Matters for Consideration

Environment Protection (Waste to Resources) Policy 2010

The *Environment Protection (Waste to Resources) Policy 2010* is administered by the EPA and has the objective of achieving sustainable waste management by applying the waste management hierarchy consistent with the principles of ecologically sustainable development. To achieve this, the State Government:

- Promotes best practice and accountable waste management, taking into account regional differences within the state.
- Requires effective recording, monitoring and reporting systems with respect to waste transport, resource recovery and waste disposal.
- Promotes environmental responsibility and involvement in waste avoidance, waste minimisation and waste management within the community.

Cleanaway supports and complies with the provisions of this policy. Cleanaway employs technology to track, record and report waste movements and disposal, and actively works to educate the community in the principles of waste avoidance, minimisation and management. The site accepts waste from metropolitan Adelaide that has been subject to prior resource recovery at a waste transfer facility or waste from regional areas that has been subject to a kerbside collection service or has been processed through a resource recovery facility/transfer station. These activities also promotes best practice environmental management approaches.

South Australia's Waste Strategy (2015-2020)

Published by Green Industries SA (GISA), South Australia's Waste Strategy 2015-2020 builds on previous versions issued by Zero Waste SA. This strategy forges links between a number of planning and policy documents, including the state strategic plan. The plan also sets a series of waste diversion targets which promotes the waste hierarchy of avoidance, reduction, reuse, recycling, recovery, treatment and disposal.

Cleanaway has a proud history of supporting the goals of the waste strategy and does so in its upstream waste management activities. The increase in landform height at the Northward Fill Landfill continues to support South Australia's strategic goals.

5.8 Planning Assessment Conclusions

The proposed amendment to increase the finished landform height at the Northward Fill Landfill will continue to utilise existing approaches to waste management and deposition. The landfill has been in operation for almost a decade subject to the EPA licence and the Approval. No changes to operational or environmental methodologies are proposed at the site. No increases to traffic volumes are anticipated and the site footprint will remain unaffected by this amendment. The Northward Fill Landfill has the required environmental and management controls in place to accommodate the increased landform. The height increase will not significantly impact on environmental or social values at or surrounding the facility.

This proposal is consistent with the spirit and intent of the relevant provision of the Wakefield Regional Council Development Plan (consolidated 9 February 2017). The proposal is also consistent with the spirit and intent of the 30-Year Plan for Greater Adelaide, the South Australian Strategic Plan, the Yorke Peninsula Regional Landuse Framework and Environment Protection Authority and Green Industries SA considerations. As a result, development authorisation to permit this amendment is warranted.

6 Conclusions

The increase in finished landform height at the Northward Fill Landfill will be recognised in an updated LEMP following receipt of development consent. The LEMP will continue to provide operational and environmental guidance at the site to the satisfaction of the EPA. With the height increase, this facility will gain operational efficiencies by reducing the frequency of landfill cell construction campaigns and the rate of land consumption into the future. These are key sustainability outcomes and in achieving them, the facility will continue to support South Australians by providing a safe, environmentally sound and unobtrusive landfill facility into the future.

Since site operational and environmental philosophies will remain unchanged, the environmental assessments, management, mitigation and monitoring measures previously undertaken and incorporated into the LEMP continue to apply. Key aspects have been identified in this assessment and the EPA will also continue to enforce these undertakings via the licence for the site.

This amendment applies only to the landform height, therefore, no deviation or further changes to existing Approval are being sought. Designs to existing and future landfill cells are not subject to change as a result of this amendment, nor is the design approach to capping.

Cleanaway seeks to build upon its reputation and record as meeting or exceeding environmental compliance standards. This approach and the contribution Cleanaway makes to the South Australian economy and local communities supports South Australia's broad planning goals and objectives, while meeting the spirit and intent of the local development plan.

The Northward Fill Landfill facility has the capability, capacity and controls in place to implement the finished landform height increase as proposed by this report.

7 References

- Department of Planning, Transport and Infrastructure, 2017. *Development Plan – Wakefield Regional Council, consolidated 9 February 2017*.
- Government of South Australia, 2011. *SA Strategic Plan*
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- The Department of Mines and Energy South Australia (MESA), 1969. *Adelaide 1:250,000 Geological Map Sheet*.
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- The Department of Mines and Energy South Australia (MESA), 1983. *Underground Water Resources of South Australia*, MESA Bulletin 48.
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8 Glossary

Acronym	Definition
AHD	Australian Height Datum
ASX	Australian Stock Exchange
CWMS	Community Wastewater Management System
CWY	Cleanaway
DAC	Development Assessment Commission
DPTI	Department for Planning, Transport and Infrastructure
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EMM	Environment Management Measure
EPA	Environment Protection Authority
GISA	Green Industries South Australia
LCCC	Local Community Consultative Committee
LEMP	Landfill Environment Management Plan
m	Metres
mg/l	Milligrams per litre
mm	Millimetres
PDC	Principle of Development Control
RL	Relative Level
SACP	State Commission Assessment Panel

Appendix A

Locality Plan



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Scale: 1:40,000



Original Page Size: A3
Job Number: 20160166
Filename: 20160166GQ002
Revision: RevA
Date: 2018-06-01
Drawn: Travis Moon
Data: Base Imagery from ESRI World Imagery
Basemap, 2017. Roads from DataSA, 2017

Legend

- Area subject to revised final landform height
- Site Location

**NORTHWARD FILL (INKERMAN)
- LOCATION OF LANDFILL
AND SURROUNDING AREA**

Appendix B

Certificates of Title



REAL PROPERTY ACT, 1886



The Registrar-General certifies that this Title Register Search displays the records maintained in the Register Book and other notations at the time of searching.



Certificate of Title - Volume 5974 Folio 868

Parent Title(s)	CT 5417/305			
Creating Dealing(s)	TG 10491444			
Title Issued	10/11/2006	Edition	1	Edition Issued 10/11/2006

Estate Type

FEE SIMPLE

Registered Proprietor

WASTE MANAGEMENT PACIFIC (S.A.) PTY. LTD. (ACN: 097 829 644)
OF 29-31 BINARY STREET YATALA QLD 4207

Description of Land

ALLOTMENT 9 DEPOSITED PLAN 32395
IN THE AREA NAMED INKERMANN
HUNDRED OF INKERMANN

Easements

SUBJECT TO EASEMENT(S) OVER THE LAND MARKED A (TG 10491444)

Schedule of Dealings

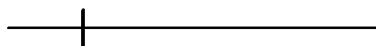
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Notations

Dealings Affecting Title	NIL
Priority Notices	NIL
Notations on Plan	NIL
Registrar-General's Notes	NIL
Administrative Interests	NIL



Register Search (CT 5974/868)
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REAL PROPERTY ACT, 1886



The Registrar-General certifies that this Title Register Search displays the records maintained in the Register Book and other notations at the time of searching.



Certificate of Title - Volume 5974 Folio 869

Parent Title(s)	CT 5417/411			
Creating Dealing(s)	TG 10491444			
Title Issued	10/11/2006	Edition	1	Edition Issued 10/11/2006

Estate Type

FEE SIMPLE

Registered Proprietor

WASTE MANAGEMENT PACIFIC (S.A.) PTY. LTD. (ACN: 097 829 644)
OF 29-31 BINARY STREET YATALA QLD 4207

Description of Land

SECTIONS 390 AND 393
HUNDRED OF INKERMANN
IN THE AREA NAMED INKERMANN

Easements

SUBJECT TO EASEMENT(S) OVER THE LAND MARKED A (TG 10491444)

Schedule of Dealings

NIL

Notations

Dealings Affecting Title	NIL
Priority Notices	NIL
Notations on Plan	NIL
Registrar-General's Notes	NIL
Administrative Interests	NIL



Cost

\$28.25



REAL PROPERTY ACT, 1886



The Registrar-General certifies that this Title Register Search displays the records maintained in the Register Book and other notations at the time of searching.



Certificate of Title - Volume 5417 Folio 367

Parent Title(s) CT 4399/221

Creating Dealing(s) CONVERTED TITLE

Title Issued 05/05/1997 **Edition** 4 **Edition Issued** 25/05/2004

Estate Type

FEE SIMPLE

Registered Proprietor

WASTE MANAGEMENT PACIFIC (S.A.) PTY. LTD. (ACN: 097 829 644)
OF 29-31 BINARY STREET YATALA QLD 4207

Description of Land

ALLOTMENT 57 DEPOSITED PLAN 34319
IN THE AREA NAMED INKERMANS
HUNDRED OF INKERMANS

Easements

NIL

Schedule of Dealings

NIL

Notations

Dealings Affecting Title NIL

Priority Notices NIL

Notations on Plan NIL

Registrar-General's Notes

CONTROLLED ACCESS ROAD VIDE PLAN 128
AMENDMENT TO DIAGRAM VIDE 444/2001

Administrative Interests

SIGNIFICANT ENVIRONMENTAL BENEFIT 2010_3045



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REAL PROPERTY ACT, 1886



The Registrar-General certifies that this Title Register Search displays the records maintained in the Register Book and other notations at the time of searching.



Certificate of Title - Volume 5417 Folio 336

Parent Title(s) CT 4399/220

Creating Dealing(s) CONVERTED TITLE

Title Issued	05/05/1997	Edition	4	Edition Issued	25/05/2004
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Estate Type

FEE SIMPLE

Registered Proprietor

WASTE MANAGEMENT PACIFIC (S.A.) PTY. LTD. (ACN: 097 829 644)
OF 29-31 BINARY STREET YATALA QLD 4207

Description of Land

ALLOTMENT 58 DEPOSITED PLAN 34319
IN THE AREA NAMED INKERMANS
HUNDRED OF INKERMANS

Easements

NIL

Schedule of Dealings

NIL

Notations

Dealings Affecting Title NIL

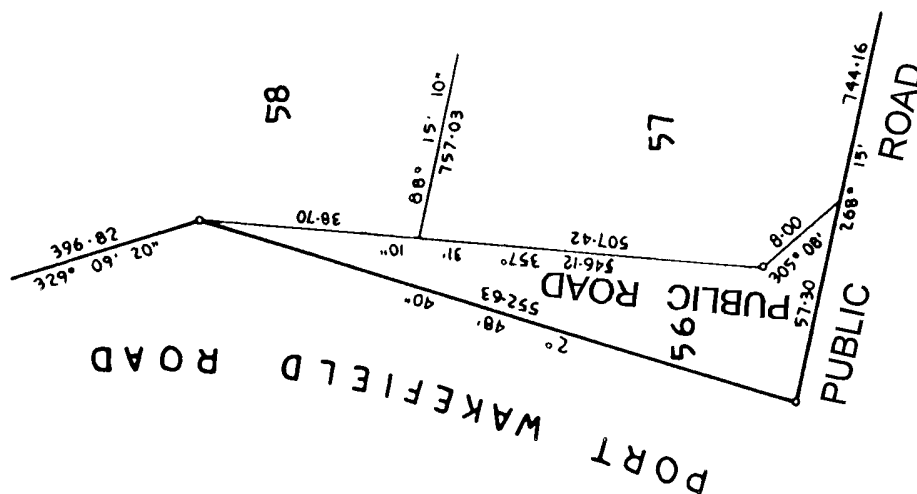
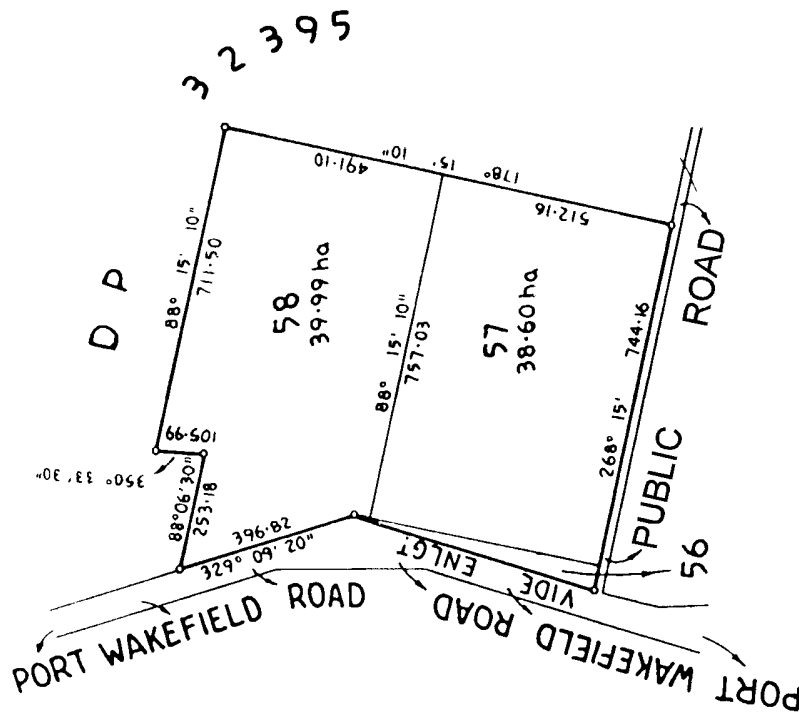
Priority Notices NIL

Notations on Plan NIL

Registrar-General's Notes

AMENDMENT TO DIAGRAM VIDE 444/2001

Administrative Interests NIL



ENLARGEMENT
(NOT TO SCALE)

REAL PROPERTY ACT, 1886



The Registrar-General certifies that this Title Register Search displays the records maintained in the Register Book and other notations at the time of searching.



Certificate of Title - Volume 5401 Folio 364

Parent Title(s)	CT 4390/325			
Creating Dealing(s)	RTC 8128728			
Title Issued	03/03/1997	Edition	4	Edition Issued 25/05/2004

Estate Type

FEE SIMPLE

Registered Proprietor

WASTE MANAGEMENT PACIFIC (S.A.) PTY. LTD. (ACN: 097 829 644)
OF 29-31 BINARY STREET YATALA QLD 4207

Description of Land

ALLOTMENT 11 DEPOSITED PLAN 45788
IN THE AREA NAMED INKERMANN
HUNDRED OF INKERMANN

Easements

NIL

Schedule of Dealings

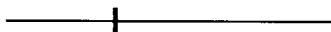
NIL

Notations

Dealings Affecting Title	NIL
Priority Notices	NIL
Notations on Plan	NIL
Registrar-General's Notes	NIL
Administrative Interests	NIL



Register Search (CT 5401/364)
25/05/2018 11:00AM
20160166
20180525003329
\$28.25



Appendix C

EPA Licence



Licence No. 14463

**WASTE MANAGEMENT PACIFIC
(S.A.) PTY LIMITED**

Inkerman Road, INKERMEN SA 5550

ISSUED:

01 Aug 2013

EXPIRY:

31 Jul 2018

ACN:

097 829 644

Environmental Authorisation
under Part 6 of the
*Environment Protection
Act 1993*

**South Australian
Environment
Protection Authority**
GPO Box 2607
Adelaide SA 5001
Tel: 08 8204 2004

EPA

Environment Protection Authority

LICENCE NUMBER 14463

LICENSEE DETAILS

Licence Holder: WASTE MANAGEMENT PACIFIC (S.A.) PTY LIMITED

ACN: 097 829 644

Registered Address: TO BE PROVIDED, MILTON QLD 4064

Premises Address(es): Inkerman Road, INKERMANS SA 5550

LICENSED ACTIVITIES

The Licensee is authorised to undertake, at the location(s) shown above, the following prescribed activities of environmental significance under Schedule 1 Part A of the Act, subject to the conditions in this Licence.

3(3) Waste or recycling depots (solid waste for on-site disposal)

TERMS OF LICENCE

Commencement Date: 01 Aug 2013

Expiry Date: 31 Jul 2018

Amended Date: 18 Oct 2017

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Licence Explanatory Notes – Do Not Form Part of the Licence

Compliance with this licence

The EPA seeks to ensure that all reasonable and practicable measures are taken to protect, restore and enhance the quality of the environment according to the principles of ecologically sustainable development. To achieve this objective, the EPA uses a number of regulatory decision making principles and actions outlined in the 'Compliance and enforcement regulatory options and tools' document available on the EPA website.

Notification – serious or material environmental harm caused or threatened

If serious or material environmental harm from pollution is caused or threatened in the course of an activity, the licence holder must, as soon as reasonably practicable after becoming aware of the harm or threatened harm, notify the EPA (preferably on EPA emergency phone number 1800 100 833) of the harm or threatened harm, its nature, the circumstances in which it occurred and the action taken to deal with it in accordance with section 83 of the [Environment Protection Act 1993](#) (the Act). In the event that the primary emergency phone number is out of order, the licence holder should phone (08) 8204 2004.

Variations, transfers and surrender of a licence

The EPA may impose or vary the conditions of a licence by notice in writing to the licence holder in accordance with sections 45 and 46 of the Act. Public notice may be required where the variation of licence conditions results in a relaxation of the requirements imposed for the protection or restoration of the environment and results in an adverse effect on any adjoining land or its amenity.

If a licence holder wishes to vary the conditions of a licence, transfer a licence to another entity, or surrender a licence, the licence holder must submit an application to the EPA in accordance with the applicable provisions of the Act (sections 45, 49 and 56, respectively). A licence remains in effect and in its original form until such time as any proposed variation, application for surrender, or transfer has been made and approved in writing by the EPA.

Suspension or cancellation of a licence

The EPA may suspend or cancel a licence by notice in writing to the licence holder in accordance with section 55 of the Act if satisfied the licence holder has either obtained the licence improperly, contravened a requirement under the Act or if the holder is a body corporate, a director of the body corporate has been guilty of misconduct of a prescribed kind (whether in this State or elsewhere).

Responsibilities under Environment Protection legislation

In addition to the conditions of any licence, a licence holder must comply with their obligations under all State and Federal legislation (as amended from time to time) including: the [Environment Protection Act 1993](#); the [Environment Protection Regulations 2009](#); all Environment Protection Policies made under the [Environment Protection Act 1993](#); and any National Environment Protection Measures not operating as an Environment Protection Policy under the [Environment Protection Act 1993](#).

Public Register Information

The EPA maintains and makes available a Public Register of details related to its determinations and other information it considers appropriate (i.e. excluding trade processes or financial information) in accordance with section 109 of the Act. These details include, but are not limited to:

- licensing and beverage container applications and approvals
- enforcement actions
- site contamination
- serious or material environmental harm caused or threatened in the course of an activity
- environment improvement programmes and environment performance agreements
- environment assessment reports; results of testing, monitoring or evaluation required by a licence
- EPA advice or direction regarding development approvals referred to the EPA by a planning authority

Definitions

Unless the contrary intention appears, terms used in this licence that are defined in the Act (including any regulations or environment protection policies made pursuant to the Act) have the respective meanings assigned to those terms by the Act.

THE ACT: The *Environment Protection Act 1993*

PREMISES: The whole of the land comprised in Titles Register - Certificate of Title, Crown Lease and Crown Record.

CT5417/336
CT5417/367
CT5401/364
CT5974/868
CT5974/869
CT5974/867

AUTHORISATION FEE PAYMENT DATE: means the anniversary of the grant or renewal of this authorisation.

CONSIGNMENT AUTHORISATION: as defined in the National Environment Protection (Movement of Controlled Waste between States and Territories) Measure, 'Consignment Authorisation' means an approval which includes a unique identifier granted by an agency or a facility delegated by an agency in the jurisdiction of destination to allow the movement of Controlled Waste.

CONTROLLED WASTE: means any wastes of a category listed in Column 1 of the Table in Schedule 1 that has 1 or more characteristics listed in the Table in Schedule 2 of the Environment Protection (movement of Controlled Waste) Policy 2014.

DAILY COVER: means soil, clay, silt, sand, gravel, rock, concrete or brick (or any combination thereof) which does not exceed 200mm in any dimension and does not exceed the chemical criteria for Intermediate Waste Soil.

E-WASTE: means waste electrical and electronic equipment which is dependent on electric currents or electromagnetic fields in order to function (including all components, subassemblies and consumables which are part of the original equipment at the time of discarding).

NOTE. For example e-waste may include:

- a. Consumer/entertainment electronics (e.g. televisions, DVD players and tuners),
- b. Devices of office-, information- and communications technology (e.g. computers, telephones and mobile phones),
- c. Household appliances (e.g. fridges, washing machines and microwaves),
- d. Lighting devices (e.g. desk lamps),
- e. Power tools (e.g. power drills) with the exclusion of stationary industrial devices,
- f. Devices used for sport and leisure including toys (e.g. fitness machines and remote control cars).

INTERIM COVER: means a compacted layer of at least 0.30 metres of soil for sealing solid waste that has been disposed and to which no additional waste will be added within the proceeding 30 days (refer to Tables 1 and 2 for physical and chemical characteristics, attached to this licence).

INTERMEDIATE LANDFILL COVER: means intermediate landfill cover as defined in conditions of this authorisation and the Intermediate Landfill Cover & Low Level contaminated Waste attachment to this licence.

LANDFILL GAS: means gases arising from the decomposition of wastes deposited or disposed of to landfill, with methane and carbon dioxide being major constituents.

LEACHATE: means a liquid that has percolated through and/or been generated by decomposition of waste material. It includes water that comes into contact with waste and is potentially contaminated by nutrients, metals, salts and other soluble or suspended components and/or products of decomposition of the waste.

NON-FRIABLE ASBESTOS: means asbestos-containing material in which the asbestos fibres are bonded by cement, vinyl, resin or other similar material, for example asbestos cement.

Advice on the requirements for handling and transport of this waste can found in EPA Guideline 414/05 - Wastes containing asbestos - removal, transport and disposal

SUITABLY QUALIFIED CONSULTANT: means a person who holds relevant qualifications, has demonstrated professional experience and expertise encompassing an appropriate range of competencies, and is either a full member or is eligible for full membership of one of the following or equivalent professional organisations:

1. The Institution of Engineers Australia
2. The Association of Consulting Engineers Australia
3. The Australian Contaminated Land Consultants Association Incorporated.

THE AUTHORITY: means the Environment Protection Authority established under Division 1 of Part 3 of the Act.

WASTE: As defined under the Environment Protection Act 1993, Waste means -

(a) any discarded, rejected, abandoned, unwanted or surplus matter, whether or not intended for sale or for recycling, reprocessing, recovery or purification by a separate operation from that which produced the matter; or

(b) anything declared by regulation (after consultation under section 5A) or by an environment protection policy to be a waste, whether of value or not.

WASTE FILL: means waste consisting of clay, concrete, rock, sand, soil or other inert mineralogical matter in pieces not exceeding 100 millimetres in length and containing chemical substances in concentrations (calculated in a manner determined by the EPA) less than the concentrations for those substances set out in Regulation 3 - Interpretation, but does not include waste consisting of or containing asbestos or bitumen.

The Waste Fill concentration criteria as specified in Regulation 3 - Interpretation, contained within the Environment Protection Regulations 2009 - is attached.

Acronyms

EPA: means Environment Protection Authority

AHD: means Australian Height Datum

DB(A): means decibel A-weighted noise.

EIP: means Environment Improvement Programme.

LEMP: means Landfill Environment Management Plan.

NATA: means National Association of Testing Authorities.

NEPM: means National Environment Protection Measure.

PCA: means potentially contaminating activities, as detailed in Regulation 50 of the Environment Protection Regulations 2009.

WTC: means Waste Transport Certificate.

WTF: means Waste Tracking Form.

Conditions of Licence

The Licensee is authorised to conduct the prescribed activities as described in this Licence at the Premises nominated, subject to the following conditions:

1 CONTROL OF EMISSIONS

1.1 DUST (330 - 43)

The Licensee must:

- 1.1.1 Maintain all trafficable areas to prevent the build up of waste, mud, dust or other debris.
- 1.1.2 Suppress dust build-up during dry or windy weather.
- 1.1.3 Implement measures to minimise the generation of dust during the unloading of any waste.
- 1.1.4 Take all reasonable and practicable measures to prevent the escape of dust from the Premises.

1.2 NOISE (325 - 38)

The Licensee must ensure:

- 1.2.1 that close proximity and low impact directional reverse beepers are installed and utilised on all mobile plant associated with waste disposal operations on the Premises; and
- 1.2.2 that noise levels from activities at the Premises do not exceed 40 dB(A) between the hours of 10 p.m. and 7 a.m. on any day at the nearest sensitive receiver when measured (and adjusted) in accordance with the Environment Protection (Noise) Policy 2007.

1.3 ODOUR (330 - 154)

The Licensee must take all reasonable and practicable measures to prevent the escape of odour from the Premises.

2 WASTE MANAGEMENT

2.1 ALTERNATIVE LITTER CONTROL SYSTEM (U - 672)

The Licensee must:

- 2.1.1 dispose of all waste within the Somernett litter control system or an alternative litter control system that has been approved in writing by the EPA (which consent has not been revoked);
- 2.1.2 ensure that all reasonable and practicable measures are taken to minimise the escape of litter from the Somernett litter control system or any alternative litter control system approved for use by the EPA; and

- 2.1.3 ensure that any litter that escapes the Somernett litter control system or any alternative litter control system is collected and disposed of on or before the close of each day's operation.

2.2 BURNING OF WASTE (U - 782)

The Licensee must not:

- 2.2.1 cause or permit any waste to be burned at the Premises, other than the burning of not more than 850 kg of sodium ethyl xanthate, subject to the terms of approval in writing from the EPA.

2.3 E-WASTE MANAGEMENT (67 - 1027)

The Licensee must ensure that e-waste is stored at the Premises in the following manner:

- 2.3.1 on an impermeable surface; and
- 2.3.2 undercover to prevent the entry of stormwater into that material.

NOTES

The Licensee should store e-waste separately from other waste and take care in its handling to maximise its potential for reuse or recycling.

2.4 PERMITTED WASTES - RECEIPT AND/OR DISPOSAL (67 - 11)

The Licensee must

- 2.4.1 ONLY RECEIVE and/or DISPOSE of waste materials at the Premises that are identified on the 'Schedule - Permitted Wastes' attachment to this licence; and
- 2.4.2 submit written application to the EPA to amend waste materials listed on the 'Schedule'.

NOTES

The EPA may during the term of this licence impose or vary the conditions of this authorisation upon approval of an application made in accordance with this condition.

2.5 RECEIPT OF CONTROLLED WASTE FROM A STATE OR TERRITORY OTHER THAN SOUTH AUSTRALIA (67 - 58)

- 2.5.1 Subject to this licence, the Licensee must not receive any Controlled Waste, list attached to this licence, from a State or Territory other than South Australia unless it is accompanied by a WTC and:
- a the Licensee has received information from the Producer of that waste that a Consignment Authorisation has been issued by the Authority for that waste;
 - b the producer has completed Part 1 of that WTC;
 - c the transporter has completed Part 2 of that WTC; and
 - d the Licensee completes Part 3 of that WTC.
- 2.5.2 The Licensee must:
- a retain the yellow copy of WTCs for no less than 12 months;
 - b provide the white copy of the WTC (with parts 1, 2 and 3 completed) to the Authority within seven days of receipt of that waste;
 - c complete the white tear off at the bottom of the WTC and provide it to the producer of that waste within seven days of receipt of that waste; and
 - d complete the yellow tear off at the bottom of the WTC and provide it to the appropriate environmental agency in the state/territory of origin of that waste seven days of receipt of that waste.

2.6 RECEIPT OF LOW LEVEL CONTAMINATED WASTE (67 - 931)

The Licensee must not receive Low Level Contaminated Waste (LLCW) at the facility unless:

- 2.6.1 the LLCW has been characterised according to the requirements set out in Schedule 3 of this licence, and environmental certification has been provided in accordance with Schedule 4 of this licence; and
- 2.6.2 the LLCW has been produced from a site, which has been assessed in accordance with Schedules A and B of the Assessment of Site Contamination NEPM, and environmental certification has been provided in accordance with Schedule 4 of this licence.

2.7 RECEIPT OF TREATMENT PLANT RESIDUES (67 - 930)

The Licensee must not receive Treatment Plant Residues (TPR's) at the Premises unless:

- 2.7.1 the TPR's have been assessed in accordance with the 'Environmental Characterisation of Waste' attachment to this licence; and
- 2.7.2 an environmental certification has been provided in accordance with the 'Environmental Certification' attachment to this licence.

3 OPERATIONAL MANAGEMENT

3.1 CELL CAPPING (67 - 1398)

The Licensee must:

- 3.1.1 submit a design specification for the capping of stage 3 of the landfill and future stages required to be capped to the EPA three months prior to reaching the final filling height for each stage; and
- 3.1.2 not construct the capping unless the design specification has been approved in writing by the EPA.

3.2 CELL CONSTRUCTION (67 - 1397)

The Licensee must:

- 3.2.1 only construct waste disposal cells in accordance with a design specification that has been approved in writing by the EPA; and
- 3.2.2 not dispose of any waste into any cell unless an as constructed report has been submitted and approved in writing by the EPA.

3.3 COMPLAINTS REGISTER (300 - 20)

The Licensee must:

- 3.3.1 maintain a register of complaints received regarding the Licensee's operations that sets out:
 - a the date and time that the complaint was reported;
 - b details of the complaint;
 - c the name and address of the complainant (if permitted by the complainant);
 - d the date and time of the events giving rise to the complaint ;
 - e the likely cause of the events giving rise to the complaint;
 - f an estimate of the temperature, wind speed, wind direction and rainfall at the time of the events giving rise to the complaint;
 - g any action taken in response to the complaint and to prevent a recurrence of the events giving rise to the complaint; and
- 3.3.2 retain the register for the duration of this licence.

3.4 CONTAMINATED WASTE & RESIDUES MANAGEMENT (67 - 1401)

The Licensee must dispose of low level contaminated waste and/or treatment plant residues within the low level contaminated waste cell.

NOTES

Low Level Contaminated Waste includes Low Level Contaminated Soil.

3.5 DAILY COVER (S - 150)

The Licensee must, before the close of each days operations cover all exposed waste with no less than 150mm of:

- 3.5.1 Daily Cover; or
- 3.5.2 an Alternative Daily Cover as approved in writing by the EPA.

3.6 ENVIRONMENTAL CERTIFICATES (67 - 932)

The Licensee must keep in a secure place all written certificates received pursuant to Conditions 67-930 and 67-931 of this licence for a period not less than 12 months from the date of that document.

3.7 FENCING (67 - 700)

The Licensee must maintain a fence around the Premises that is suitable for preventing unauthorised access.

3.8 HAZARDS (67 - 836)

The Licensee must fence, mark or otherwise define:

- 3.8.1 Bore holes within the Premises;
- 3.8.2 All ponds or dams constructed for the collection of leachate or stormwater; and
- 3.8.3 Any other excavations within the Premises.

3.9 HOURS OF OPERATION (330 - 41)

The Licensee must only:

- 3.9.1 receive waste between 6:00am and 7:00pm on any day; and
- 3.9.2 operate the waste depot between 6:00am and 7:30pm on any day.

3.10 IMPLEMENT LEMP (315 - 724)

The Licensee must:

- 3.10.1 establish, maintain, operate and close the Premises in accordance with the approved document entitled 'Transpacific Waste Management Northward Fill Landfill Environmental Management Plan, volumes 1, 2 and 3 (Ref: 20040614RA1)', except where inconsistent with conditions of this licence; and
- 3.10.2 only implement any amendments to the LEMP once they have been approved in writing by the EPA.

3.11 INSTALL LANDFILL GAS SYSTEM (67 - 1399)

The Licensee must install an active Landfill Gas control system within stage 1 and 2 of the landfill on or before the date indicated in the compliance date column.

Compliance Date: 30-Nov-2013

3.12 INTERIM COVER (67 - 835)

The Licensee must:

- 3.12.1 Ensure that an interim cover is applied to all areas at the Premises in which waste has been disposed and in which no additional waste will be disposed within the following 30 days.
- 3.12.2 Only apply interim cover that meets Waste Fill or Intermediate Landfill Cover criteria.

3.13 LEACHATE MONITORING AND MANAGEMENT (305 - 722)

The Licensee must:

- 3.13.1 monitor and record all leachate levels from all leachate sumps on the Premises on a weekly basis;
- 3.13.2 ensure that leachate levels do not exceed a 300 millimetre head above the liner in any landfill cell;
- 3.13.3 dispose of leachate to the leachate ponds on the Premises that have been constructed and approved for use in writing by the EPA;
- 3.13.4 not re-circulate leachate within any landfill cell; and
- 3.13.5 include the records of all leachate level monitoring for the reporting period covered in the annual report required by condition 67-825 of this licence.

3.14 MAINTAIN RECORDS (67 - 1260)

The Licensee must ensure that records and certification to demonstrate all waste received as Waste Fill or Intermediate Soil at the Premises in accordance with conditions of this licence are maintained for a period of not less than 12 months from the date of receiving the Waste Fill or Intermediate Soil.

3.15 NON-FRIABLE ASBESTOS MANAGEMENT (67 - 704)

The Licensee must:

- 3.15.1 Only receive non-friable asbestos:
 - a that has been wrapped and sealed in plastic of no less than 200 micron thick; or
 - b that has been received in plastic-lined bins by a person licensed by the Authority to transport non-friable asbestos.
- 3.15.2 Only dispose of non-friable asbestos in an area solely designated for the disposal of that waste; and
 - a display a sign at the designated area stating that it is a non-friable asbestos disposal area.
- 3.15.3 On or before the close of each days operations, cover any non-friable asbestos disposed at the premises with no less than 150 millimetres of Waste Fill;
- 3.15.4 Not dispose of non-friable asbestos within one metre of any final surface level at the Premises; and
- 3.15.5 Take all reasonable and practicable measures to prevent the generation of asbestos dust.

3.16 RECEIPT OF WASTE FILL AND INTERMEDIATE SOIL (67 - 1256)

The Licensee must only receive Waste Fill or Intermediate Soil at the Premises:

- 3.16.1 if it complies with the relevant definitions and chemical criteria for Waste Fill or Intermediate Soil as defined in the attachment(s) to this Licence; and
- 3.16.2 provided it is received in accordance with conditions 67-1257, 67-1258, or 67-1259 of this licence.

3.17 RECEIPT OF WASTE FILL FROM DOMESTIC PREMISES OR LESS THAN 100 TONNES FROM OTHER SOURCES WHERE A POTENTIALLY CONTAMINATING ACTIVITY (PCA) HAS NOT OCCURRED (67 - 1257)

The Licensee must take all reasonable and practicable measures to ensure that Waste Fill that is sourced from a site where a PCA has not occurred is only received at the Premises, if it is:

- 3.17.1 from a single domestic premises or is less than 100 tonnes from any other single non-PCA source;
- 3.17.2 not obviously discoloured or odorous and does not display any other indication that contamination is likely to be present; and
- 3.17.3 not known nor likely to be contaminated based upon knowledge of the source.

3.18 RECEIPT OF WASTE FILL OR INTERMEDIATE SOIL FROM SOURCE SITE THAT WAS NOT SUBJECTED TO A FULL ASSESSMENT IN ACCORDANCE WITH THE SITE CONTAMINATION NEPM AND: * WHERE A POTENTIALLY CONTAMINATING ACTIVITY (PCA) HAS OCCURRED, OR * IS MORE THAN 100 TONNES FROM A SINGLE NON-PCA SITE (BUT IS NOT A DOMESTIC PREMISES) (67 - 1259)

The Licensee must ensure that Waste Fill or Intermediate Soil that is sourced from a site where a PCA has occurred or more than 100 tonnes from a single non-PCA source (not being a domestic premises) IS ONLY RECEIVED AT THE PREMISES, IF:

- 3.18.1 it has been subject to a statistically relevant sampling program in accordance with the procedures and methodologies set out in Schedule B(2) of the Site Contamination NEPM that:
 - a determines the concentrations for all of the chemical substances in the attachment(s) to this Licence; and
 - b includes any additional substances which a suitably qualified consultant reasonably expects to be present in that waste, based upon the source of that waste; and
 - c chemical analysis of those samples has been undertaken in accordance with Schedule B(3) of the Site Contamination NEPM by a laboratory accredited by NATA for all relevant analyses; and
 - d those chemical analyses are assessed by a suitably qualified consultant in accordance with Schedule B(1) and B(2) of the Site Contamination NEPM; and
- 3.18.2 written, signed and dated certification is received from the suitably qualified consultant stating that:
 - a based upon the sampling program and the assessment of the chemical analyses conducted in accordance with paragraph 1 of this condition, the waste constitutes Waste Fill or Intermediate Soil; and
 - b any chemical substances present that are additional to those specified for Waste Fill or Intermediate Soil, will not pose any harm to human health or the environment when that waste is received and deposited at the Premises in accordance with conditions of this licence.

**3.19 RECEIPT OF WASTE FILL OR INTERMEDIATE SOIL FROM SOURCE SITE
WHERE A POTENTIALLY CONTAMINATING ACTIVITY (PCA) HAS OCCURRED
AND WAS SUBJECTED TO A FULL ASSESSMENT IN ACCORDANCE WITH THE
SITE CONTAMINATION NEPM (67 - 1258)**

The Licensee must ensure that Waste Fill or Intermediate Soil that is sourced from a site where a PCA has occurred is only received at the Premises if:

- 3.19.1 it has been produced from a site which has been assessed in accordance with Schedules A and B of the Site Contamination NEPM; and
- 3.19.2 is accompanied by written, signed and dated certification from an experienced site contamination consultant or site contamination auditor, stating that based upon the assessment undertaken in accordance with paragraph 1 and any other sampling or testing of the waste they require, that the waste constitutes Waste Fill or Intermediate Soil.

3.20 SECURITY (67 - 703)

The Licensee must lock all access gates when the Premises is unattended.

3.21 SIGNAGE (67 - 832)

The Licensee must display a sign at the entrance to the Premises clearly stating;

- 3.21.1 That the Licensee holds an authorisation under the Act;
- 3.21.2 The name of the Licensee;
- 3.21.3 The number of that authorisation;
- 3.21.4 The hours that the waste depot is open to receive waste;
- 3.21.5 The types of waste prohibited from disposal; and
- 3.21.6 The after hours phone number.

3.22 STAGE 1 AND 2 CAPPING (67 - 1402)

The Licensee must cap stage 1 and stage 2 of the landfill in accordance with the approved capping plan entitled "Northward Fill Stage 1 and 2 Cap Technical Specification ref: 20101486FS1" dated November 2012.

3.23 STORAGE OF FUEL, BATTERIES AND OIL (67 - 694)

The Licensee must:

- 3.23.1 store fuel, batteries and oil within a bund in accordance with the EPA Guideline entitled 'Bunding and Spill Management' updated June 2007;

- 3.23.2 store batteries undercover preventing the entry of stormwater into that bund; and
- 3.23.3 store and decant oil under a roofed area preventing the entry of stormwater into that bund.

3.24 STORMWATER (330 - 42)

The Licensee must:

- 3.24.1 ensure that stormwater, washdown water or any other liquids which result from the waste depot operations are treated in accordance with the LEMP;
- 3.24.2 ensure the stormwater treatment system is regularly maintained and kept clean to prevent litter, waste, soil or sediment entering the collection system;
- 3.24.3 ensure that stormwater that has come into contact with waste is kept separate from stormwater that has not come into contact with waste; and
- 3.24.4 dispose of any stormwater that has come into contact with waste in the leachate ponds as if it were leachate.

3.25 SUBMIT UPDATED GAS MANAGEMENT PLAN (315 - 725)

The Licensee must:

- 3.25.1 submit to the EPA an updated Landfill Gas Management Plan (LGMP) to address gas management for current and future stages of the landfill on or before the date indicated in the compliance date column; and
- 3.25.2 implement the LGMP once approved in writing by the EPA.

Compliance Date: 30-Nov-2013

3.26 SUPERVISION (67 - 702)

The Licensee must supervise the receipt and disposal of waste at the Premises to ensure that it is managed in accordance with the conditions of this authorisation.

3.27 TRAILER TRANSFER AREA/WHEEL WASH (67 - 838)

The licensee must:

- 3.27.1 Dispose of all waste stored within the trailer transfer area on or before the close of each days operations;
- 3.27.2 Ensure that all waste transport vehicles accessing the landfill utilise the wheel wash upon exiting the site; and

- 3.27.3 Treat all wastewater from the wheel wash as leachate and either transfer it to the leachate ponds or to a waste depot that is licensed by the Authority to receive that waste.

3.28 UNAUTHORISED FIRE REPORTING (U - 781)

In the event of an unauthorised fire at the Premises the Licensee must:

- 3.28.1 take immediate action to extinguish any fires at the Premises, and/or where appropriate, notify emergency services
- 3.28.2 notify the EPA within 2 hours of becoming aware of the fire
- 3.28.3 provide a written report to the EPA within 72 hours of bringing the fire under control setting out the following:
 - a The date of the fire;
 - b The approximate time of the fire;
 - c The cause of the fire (if known);
 - d The area of the Premises where the fire occurred;
 - e Measures used to extinguish the fire and to manage any environmental impacts; and
 - f Appropriate measures that will be taken to reduce the risk of further fire at the Premises.

3.29 USED TYRES DISPOSAL CRITERIA (67 - 1400)

The Licensee must not dispose of used tyres at the waste depot unless they have been reduced in size to less than 250 millimetres in any direction.

3.30 VERMIN (330 - 153)

The Licensee must take all reasonable and practicable measures to prevent the attraction and harbourage of vermin.

4 MONITORING AND REPORTING

4.1 ANNUAL REPORT (67 - 825)

The licensee must

- 4.1.1 on or before 31 August each year, submit a written annual report that sets out for the previous Financial year:
- a a summary of Complaints and actions arising (refer Condition 300-20);
 - b a summary of the results and interpretation and actions arising from Groundwater monitoring including levels (refer condition 305-723);
 - c a summary of the results, an interpretation and actions arising from Landfill gas monitoring (refer condition 315-725);
 - d summary of the results, and interpretation and actions arising from stormwater and surface water monitoring (refer condition 305-105)
 - e summary of all Waste Soil received, stored and/or disposed in accordance with Conditions 67-1256, 67-1257, 67-1258, 67-1259, 67-1260, 67-930, 67-931 & 67-932;
 - f progress towards final height (mAHD in each cell and stage) and any updates to stage or cell planning;
 - g summary of all incidents, fires and emergencies;
 - h summary of results and interpretation and actions arising from leachate monitoring and management including chemical analysis, leachate levels and pumping records; and
 - i an updated plan of premises that shows the locations of:
 - i operational cells, proposed future cells, and closed cells,
 - ii landfill Gas monitoring and/or extraction bore network,
 - iii groundwater monitoring bores, leachate sumps, pipework and ponds, stormwater ponds and diversion networks,
 - iv materials storage areas, buildings access roads, Premises boundary, fencelines and nearest sensitive receptors.
 - j any conclusions and recommendations arising from the summary of the results.

4.2 GROUNDWATER MONITORING (305 - 723)

The Licensee must:

- 4.2.1 take groundwater samples for water quality analysis at six monthly intervals from all groundwater monitoring bores located on the Premises;
- 4.2.2 ensure that the groundwater quality samples referred to in paragraph 1 of this condition, are analysed for the analytical suite of parameters contained in Table 1 "Groundwater Monitoring Parameters" and Table 2 "Field Parameter Variations" attached to this licence;
- 4.2.3 record groundwater levels from all monitoring bores located on the Premises at six monthly intervals; and
- 4.2.4 submit the results of all groundwater monitoring for the reporting period covered in the annual report, as required by condition 67-825 of this licence.

4.3 STORMWATER AND SURFACE WATER MONITORING (305 - 105)

The Licensee must:

- 4.3.1 monitor stormwater and surface water in accordance with the LEMP;
- 4.3.2 undertake sampling and analysis of surface water at least twice each year when there is water present in the ponds;
- 4.3.3 submit the results of the monitoring to the Authority, along with additional information required in accordance with annual reporting requirements of condition 67-825 of this licence; and
- 4.3.4 notify the Authority immediately, but in case with two hours:
 - a if stormwater or surface water contamination occurs; or
 - b if any event occurs that has the potential to cause stormwater and surface water contamination.

5 ADMINISTRATION

5.1 ALTERATIONS to PLANT and EQUIPMENT (400 - 348)

The Licensee must:

- 5.1.1 not construct or alter a building or structure, or, install or alter any plant or equipment at the Premises, without written approval from the EPA, where such changes:
 - a have the potential to increase the emissions, or alter the nature of pollutants or waste currently generated by, or from the licensed activity, or
 - b have the potential to increase the risk of environmental harm, or
 - c would relocate the point of discharge of pollution or waste at the Premises;
- 5.1.2 ensure that written application is submitted to the EPA on the EPA form entitled 'Application for Alterations to Plant and Equipment' that details the proposed changes; and
- 5.1.3 pay the prescribed application fee indicated on the Application form.

NOTES

A. The EPA may during the term of this licence impose or vary the conditions of this authorisation upon approval of an application made in accordance with this condition.

B. The 'Application for Alterations to Plant and Equipment' form is available on the EPA website at -
http://www.epa.sa.gov.au/xstd_files/Licensing/Form/06_equipment_change.pdf.

C. In some circumstances installation of plant and equipment may be subject to consent under the provisions of the Development Act, which may have priority over the obligations of this condition - check with the licence coordinator for advice prior to completing the Application form.

5.2 ANNUAL RETURN PROCESS (400 - 78)

The Licensee must:

- 5.2.1 submit an annual return at least 90 days before the authorisation fee payment date, if this licence is for a term of two years or more; and
- 5.2.2 pay the annual authorisation fee by the authorisation fee payment date.

5.3 CHANGE OF LICENSEE DETAILS (400 - 338)

If the Licensee's name or postal address (or both) changes, then the Licensee must inform the EPA within 28 days of the change occurring.

5.4 CHANGE to PROCESS EMISSIONS or WASTE (400 - 347)

The Licensee must:

- 5.4.1 not undertake changes to operating processes at the Premises without written approval from the EPA where such changes:
 - a have the potential to increase the emissions, or alter the nature, of pollutants or waste currently generated by or from the licensed activity; or
 - b have the potential to increase the risk of environmental harm; or
 - c would relocate the point of discharge of pollution or waste at the Premises;
- 5.4.2 ensure that written application is submitted to the EPA on the EPA form entitled 'Application for Change to Process Emissions or Waste', that details the proposed changes; and
- 5.4.3 pay the prescribed application fee indicated on the Application form.

NOTES

The EPA may during the term of this licence impose or vary the conditions of this authorisation upon approval of an application made in accordance with this condition.

The 'Application for Change to Process Emissions or Waste' form is available on the EPA website at -
http://www.epa.sa.gov.au/xstd_files/Licensing/Form/06_process_change.pdf.

5.5 DISPLAY LICENCE (400 - 339)

The Licensee must display a copy of this licence on a notice board at the Premises.

5.6 IMPOSE OR VARY CONDITIONS (400 - 201)

The EPA may during the term of this licence impose or vary conditions:

- 5.6.1 in relation to testing, monitoring and reporting referred to in section 52(1)(a) of the Act;
- 5.6.2 which require the Licensee, in accordance with section 53 of the Act, to prepare a plan of action to be taken in the event of an emergency;
- 5.6.3 which require the Licensee to develop an EIP as set out in section 54 of the Act and to comply with the requirements of the EIP;
- 5.6.4 which relate to provision of information relating to the Licensee or any agent or contractor undertaking any activity on behalf of the Licensee pursuant to this licence; and
- 5.6.5 which relate to provision of information relating to the activity subject to the licence including the levels of inputs and outputs and the amounts of pollutants or waste generated by the activity.

5.7 LICENCE INFORMATION TO EMPLOYEES/CONTRACTORS (400 - 215)

The Licensee must ensure that every employee, agent or contractor responsible for carrying out any task controlled by this licence is properly advised as to the requirements of this licence and the general environmental duty under section 25 of the Act that relate to that person's tasks and responsibilities as employee, agent or contractor.

5.8 LICENCE RENEWAL PROCESS (400 - 79)

An application for renewal of this licence must be made at least 90 days before the expiry date of this licence.

5.9 PATHLINE FINANCIAL ASSURANCE (320 - 13)

Pathline Financial Assurance

- 5.9.1 The Licensee must provide a financial assurance on or before 31 August each year that is equal to \$0.25 for each tonne of waste received during the previous financial year;
- 5.9.2 The Licensee must lodge the financial assurance with the Authority in the form of a bond (supported by a guarantee, insurance policy, or other security approved by the Authority) or in the form of a pecuniary sum discharge or repayment of which is conditional upon the Licensee complying with conditions 305-375, 305-105, 305-376 of this licence and undertaking when necessary emergency remediation of the Depot.

NOTES

The bond or sum shall be discharged in whole when the Authority is satisfied that these conditions of discharge have been complied with or are no longer necessary or in part when the accrued amount of the bond or sum exceeds the total costs, expenses, loss and damage that have been incurred or suffered or are likely to be incurred or suffered by any person (including the Authority) as a result of the Licensee's failure to satisfy these conditions of discharge.

Attachments

Groundwater attahment.pdf"

INTERMEDIATE WASTE SOIL.pdf"

LOW LEVEL CONTAMINATED WASTE.pdf"

Permitted wastes attachment.pdf"

WASTE FILL REGULATION 3.pdf"

Schedules - Waste attach.pdf"



Groundwater Monitoring

Authorisation Attachment – page 1 of 2

Table 1 – Groundwater Monitoring Parameters

Waste Management Pacific (SA) Pty Ltd – EPA Environmental Authorisation 14463

PHYSIO-CHEMICAL
Total Dissolved Solids (TDS)
pH Value
Biological Oxygen Demand (BOD)
Chemical Oxygen Demand (COD)
ORGANICS / NUTRIENTS
Nitrate (NO ₃ as N)
Nitrite (NO ₂ as N)
Ammonia (NH ₃ as N)
Kjeldahl Nitrogen (TKN)
Total Phosphorous
Polychlorinated Biphenyls (PCBs)
Total Phenols/Phenols by speciation
Benzene, Ethylbenzene, Toluene, Xylenes (BTEX)
Total Petroleum Hydrocarbons (TPH)
Polychlorinated Aromatic Hydrocarbons (PAHs)
Total Organic Carbon (TOC)
Organochlorine Pesticides (OCPs)
CATIONS / ANIONS
Calcium (Ca)
Sodium (Na)
Magnesium (Mg)
Potassium (K)
Total Alkalinity
Bicarbonate (HCO ₃)
Carbonate (CO ₃)
Chloride (Cl)
Sulphate (SO ₄)

Table 1 – Groundwater Monitoring Parameters *(continued)*

Waste Management Pacific (SA) Pty Ltd – EPA Environmental Authorisation 14463

INORGANICS
Soluble Iron (Fe)
Total Cyanide
Arsenic (As)
Boron (B)
Cadmium (Cd)
Chromium (Cr)
Copper (Cu)
Iron (Fe)
Lead (Pb)
Manganese (Mn)
Mercury (Hg)
Nickel (Ni)
Zinc (Zn)

Table 2 – Field Parameter Variations

Waste Management Pacific (SA) Pty Ltd – EPA Environmental Authorisation 14463

PARAMETER	PERMITTED VARIATION
Electrical Conductivity (EC)	± 5%
pH	± 0.1 units
Redox Potential (Eh)	± 10mV
Temperature	± 0.2° C

Intermediate Waste Soil

Intermediate Waste Soil – Chemical characteristics

CHEMICAL SUBSTANCE	Concentration in mg/kg (dry weight)	MAXIMUM LEACHATE CONCENTRATION - in mg/L
		Method of Analysis - AS 4439.3 – 1997
Aldrin + dieldrin (total)	<2	#
Arsenic	<200	5
Barium		
Benzene	<5	#
Benzo(a)pyrene	<2	#
Beryllium	<40	1
Cadmium	<30	0.5
Cobalt	<170	#
Chlordane	<2	#
Chromium (III)	<12%	#
Chromium (VI)	<200	5
Copper	<2000	10
Cyanides (Total)	<1000	10
DDT	<2	#
Ethylbenzene	<100	#
Heptachlor	<2	#
Lead	<1200	5
Manganese	<6000	50
Methyl mercury	<20	#
Mercury	<30	0.1
Nickel	<600	2
Total Petroleum Hydrocarbons (TPH) C ₆ -C ₉	<100	#
TPH > C ₉	<1000	#
Phenolic compounds (total)	<17000	#
Polychlorinated biphenyls	<2	#
Polycyclic Aromatic Hydrocarbons (PAH) (Total)	<40	#
Toluene	<50	#
Xylene (total)	<180	#
Zinc	<14000	250

1. The assessment of the chemical analysis carried out on samples of the waste soil in accordance with this condition may include scientifically valid statistical analysis to justify classification of the waste soil in accordance with the values listed in this table. Such statistical analysis may include 95%UCL applied to the total dry weight results to demonstrate compliance criteria are not exceeded. No individual result shall be greater than 2.5 times the stated total dry weight criteria.
2. '#' indicates that leachate testing for that chemical substance is not required provided that the concentration of that chemical substance in mg/kg (dry weight) does not exceed the value specified for that category of waste soil.
3. '<' = 'less than'

Low Level Contaminated Waste Soil

Criteria for the Classification and Disposal of Low Level Contaminated Waste – Chemical Characteristics

CHEMICAL SUBSTANCE	LOW LEVEL CONTAMINATED WASTE	
	CONCENTRATION in mg/kg (dry weight)	MAXIMUM LEACHATE CONCENTRATION in mg/L
		Method of Analysis AS 4439.3 – 1997
Aldrin + dieldrin (total)	<50	0.1
Arsenic	<750	5 TPR 1
Barium		100 TPR 1, 2
Benzene	<15	1
Benzo(a)pyrene	<5	0.001
Beryllium	<150	1
Cadmium	<60	0.5 TPR 1
Cobalt	<1 000	#
Chlordane	<50	0.6
Chromium (total)	-	20 TPR 1, 2
Chromium (III)	<30%	#
Chromium (VI)	<750	5 TPR 1
Copper	<7 500	10 TPR 1
Cyanides (total)	<3 500	10
DDT	<50	0.3
Ethylbenzene	<1 000	30
Heptachlor	<50	0.3
Iron	-	100 TPR 1, 2
Lead	<5 000	5 TPR 1
Manganese	<10 000	50 TPR 1
Methyl mercury	<75	#
Mercury	<110	0.1 TPR 1
Nickel	<3 000	2 TPR 1
Total Petroleum Hydrocarbons (TPH) C ₆ -C ₉	<1 000	#
TPH > C ₉	<10 000	#
Phenolic compounds (total)	<50 000	14.4
Polychlorinated biphenyls (PCBs)	<50	#

(continued)

Polycyclic Aromatic Hydrocarbons (PAH) (total)	<200	#
Silver	-	5 TPR 1, 2
Toluene	<500	14.4
Xylene (total)	<1 800	50
Zinc	<50 000	250 TPR 1

1. The assessment of the chemical analysis carried out on samples of the waste in accordance with conditions of this licence may include scientifically valid statistical analysis to justify classification of the waste in accordance with the values listed in this table.
2. ‘#’ indicates that leachate testing for that chemical substance is not required provided that the concentration of that chemical substance in mg/kg (dry weight) does not exceed the value specified for that category of waste.
3. ‘<’ = ‘less than’
4. TPR¹ – analyte required as minimum suite for treatment plant residues.
5. TPR² – testing required for treatment plant residues only.



Schedule – Permitted Wastes

Waste Management Pacific (SA) Pty Ltd – EPA Environmental Authorisation 14463

WASTE STREAM	PERMITTED to RECEIVE	PERMITTED to DISPOSE
Asbestos: Non-Friable	YES	YES
Commercial and Industrial Waste (General)	YES	YES
Compostable Organic Waste	YES	YES
Construction and Demolition Waste (Inert)	YES	YES
Construction and Demolition Waste (Mixed)	YES	YES
Domestic Waste	YES	YES
E-waste	YES	NO
Green Waste	YES	YES
Inert Waste	YES	YES
Municipal Solid Waste - Kerbside Bin Collection	YES	YES
Putrescible Waste	YES	YES
Quarantine Waste	YES	YES
Used Tyres	YES	YES
Waste Fill	YES	YES
Copper Chrome Arsenate (CCA) Treated Timber	YES	YES
Scrap Metal	YES	NO
Intermediate Soil	YES	YES
Intermediate Waste	YES	YES
Low Level Contaminated Soil	YES	YES
Low Level Contaminated Waste	YES	YES
Treatment Plant Residues	YES	YES
Used Foundry Sand	YES	YES



Waste Fill - Regulation 3

Interpretation - Environment Protection Regulations 2009

The full interpretation of 'WASTE FILL' - as defined in the Environment Protection Regulations 2009, Regulation 3(1) is -

waste fill means waste consisting of clay, concrete, rock, sand, soil or other inert mineralogical matter in pieces not exceeding 100 millimetres in length and containing chemical substances in concentrations (calculated in a manner determined by the EPA) less than the concentrations for those substances set out in Regulation 3 - Interpretation, but does not include waste consisting of or containing asbestos or bitumen.

Chemical substance	Concentration (milligrams per kilogram of waste fill)	Chemical substance	Concentration (milligrams per kilogram of waste fill)
Aldrin/dieldrin (total)	2	Ethylbenzene	3.1
Arsenic	20	Heptachlor	2
Barium	300	Lead	300
Benzene	1	Manganese	500
Benzo(a)pyrene	1	Mercury	1
Beryllium	20	Nickel	60
Cadmium	3	Petroleum hydrocarbons TPH C6-C9 (total)	65
Chlordane	2	Phenolic compounds (total)	0.5
Chromium (III)	400	Polychlorinated biphenyls (PCBs)	2
Chromium (VI)	1	Polycyclic aromatic hydrocarbons (PAH) (total)	5
Cobalt	170	Petroleum hydrocarbons TPH>C9	1000
Copper	60	Toluene	1.4
Cyanides (total)	500	Xylene (total)	14
DDT	2	Zinc	200



Schedule – Waste

Schedule 3

Waste Management Pacific (SA) Pty Ltd, EPA Environmental Authorisation 14463

Environmental Certification of Low Level Contaminated Waste

For wastes classified as **Low Level Contaminated Waste** under conditions of this Licence, the Licensee must ensure that:

1. an environmental consultant has carried out a sampling program in accordance with the sampling procedures and methodologies set out in Schedule B(2) of the Assessment of Site Contamination NEPM in relation to the waste or other valid scientific sampling program, and has assessed the chemical analysis of those samples undertaken in accordance with paragraph 2 below, to determine:
 - a. the concentrations in milligrams per kilogram, dry weight, for all of the chemical substances in Table 3 of this licence and any other chemical substances, which the environmental consultant reasonably expects to be present in the waste, based on the source and any prior uses or treatment of that waste or waste soil; and
 - b. the leachate concentrations in milligrams per litre, for all of the chemical substances selected in subparagraph 1.a, where provided for, in Table 3.
2. the chemical analysis of the samples referred to in paragraph 1 above, is undertaken in accordance with Schedule B(3) of the Assessment of Site Contamination NEPM and by a laboratory NATA accredited for all the chemical analysis carried out, as applicable.
3. the leachate analysis referred to in paragraph 1.b above, is undertaken using Australian Standard 4439.3 - 1997 (Preparation of Leachates, Bottle Leaching Procedure) for non-volatile or semi-volatile compounds, and Australian Standard 4439.2 – 1997 (Preparation of Leachates – Zero Headspace Procedure) for volatile compounds.

Schedule 4

Environmental Certification of Low Level Contaminated Waste

For wastes classified as **Low Level Contaminated Waste** under conditions of this Licence, the Licensee must:

1. receive written, signed and dated certification from the producer of the residues or environmental consultant stating that, based on the environmental characterisation of the waste carried out in accordance with Schedule 3 and any other sampling or testing of the waste as required by the environmental consultant, the waste complies with the maximum leachate concentrations (in milligrams per litre) set out for Low Level Contaminated Waste in Table 3 for all of the chemical substances that have a maximum leachate concentration provided in Table 3.

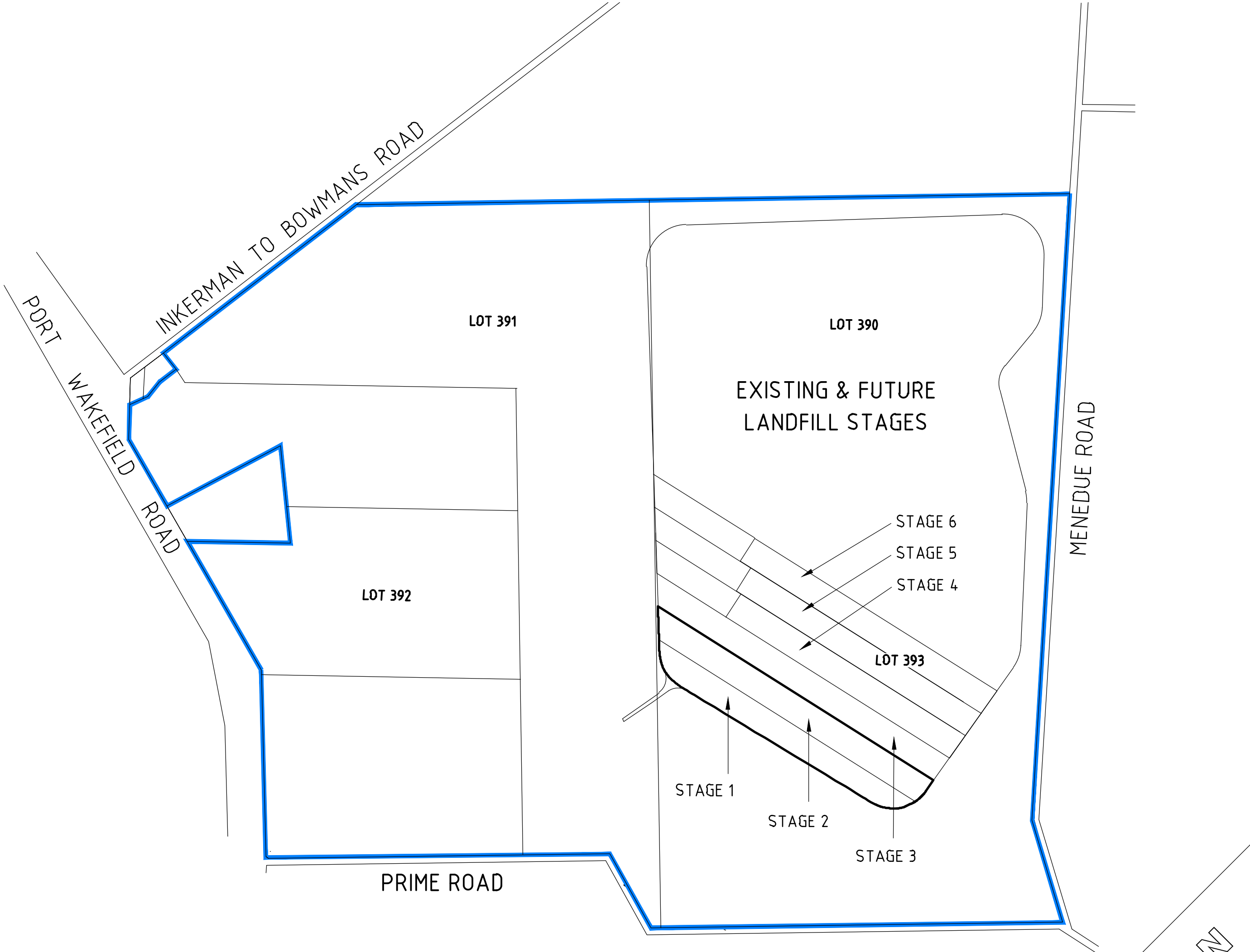
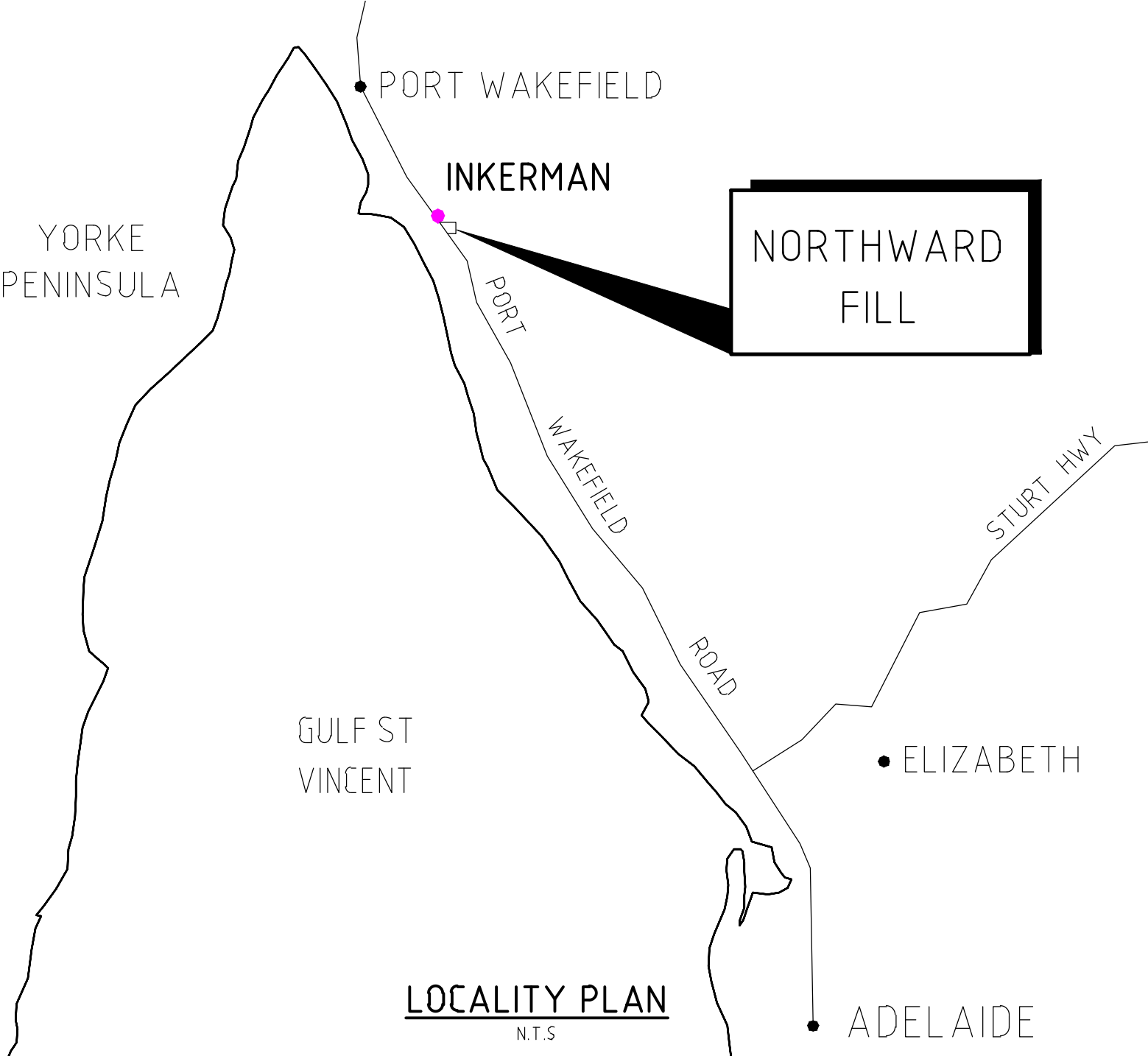
Appendix D

Revised Landform Design Drawings

CLEANAWAY WASTE MANAGEMENT LTD

NORTHWARD FILL, INKERMAN, SA

PROPOSED RAISED CAP



- NOTES:
- AERIAL MODEL BASED ON
1. AERIAL SURVEY UNDERTAKEN BY AUJAY DATED 07th JUNE 2017
 2. LANDFILL STAGING PLAN TAKEN FROM LANDFILL ENVIRONMENT MANAGEMENT PLAN (Ref: 20040614 REV G) DATED JUNE 2010
 3. PROPOSED BASELINER DESIGN (TOP OF BASELINER) FOR ALL STAGES (EXCLUDING STAGES 3, 4.2-4.4 AND 5.2-5.4) TAKEN FROM MAUNSELL TOP OF SUBGRADE DESIGN, SHOWN ON LANDFILL ENVIRONMENT MANAGEMENT PLAN (Ref: 20040614 REV G) DATED JUNE 2010. THE TOP OF BASELINER HAS BEEN MODELLED BY OFFSETTING THE SUBGRADE SURFACE UP BY 1.0m. THE TOP OF DRAINAGE LAYER HAS BEEN MODELLED BY OFFSETTING THE BASELINER (INCLUDING SIDELINER) SURFACE UP BY 0.3m
 4. ASCON SURVEY FOR TOP OF DRAINAGE LAYER FOR STAGES 3, 4.2-4.4 AND 5.2-5.4
- CLIENT INPUTS THROUGHOUT MODEL DEVELOPMENT (EG. INTERIM WASTE BATTER SLOPES AND CAP THICKNESS AND MAXIMUM POST SETTLEMENT CAP HEIGHT EXPECTATION OF 32m AHD)

SHEET LIST TABLE	
SHEET No.	SHEET TITLE
01	LOCATION PLAN & DRAWING SCHEDULE
02	TOP OF CAP - CONTOURS
03	SECTION A-A AND B-B
04	SECTION C-C AND D-D

NOT FOR CONSTRUCTION

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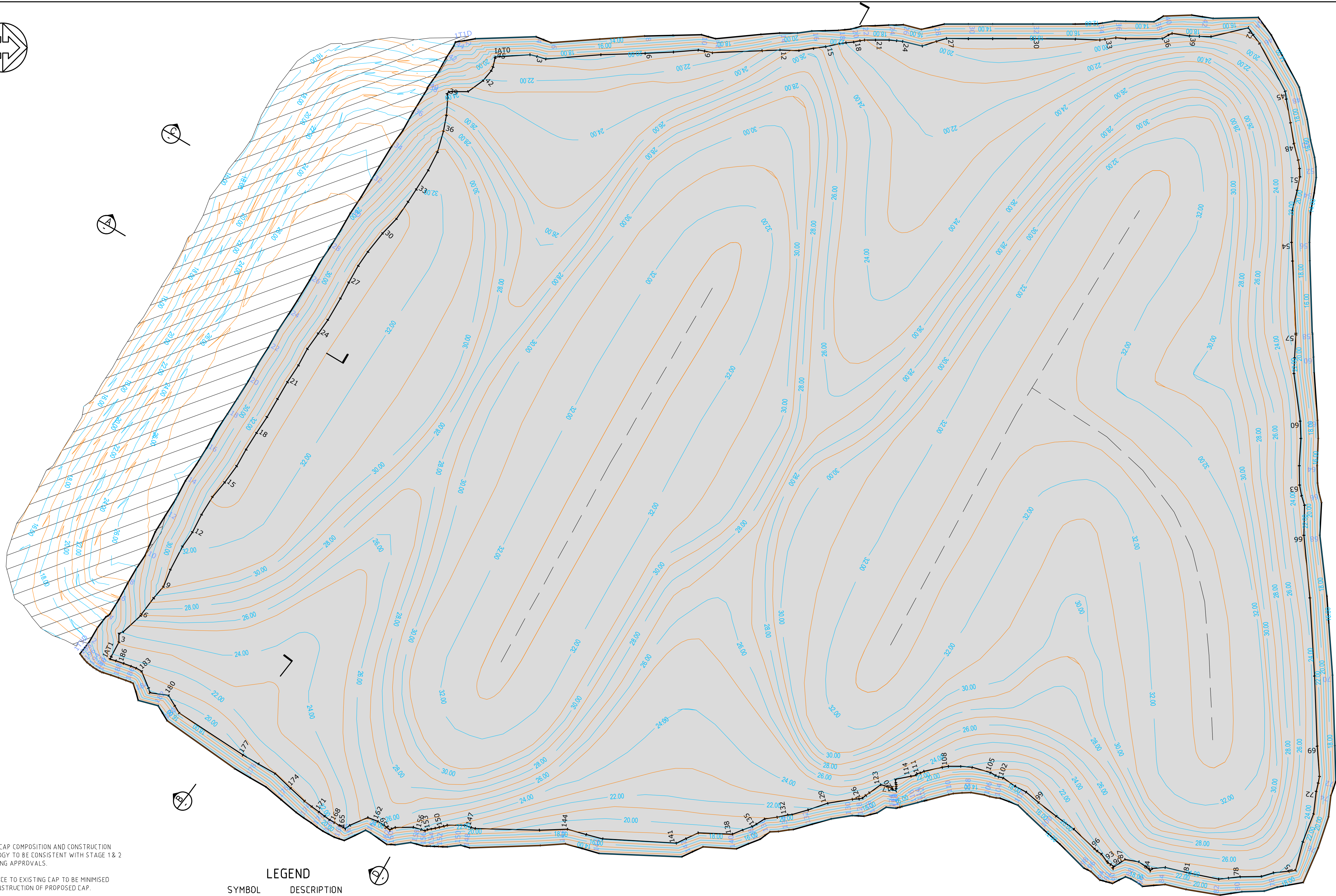


a better approach

- CIVIL INFRASTRUCTURE
- STRUCTURAL
- ENVIRONMENTAL
- WATER RESOURCES
- STORMWATER MANAGEMENT
- ROAD SAFETY & TRAFFIC
- BUILDING SURVEYING
- SPATIAL INFORMATION
- ELECTRICAL, MECHANICAL AND AUTOMOTIVE

100mm ON ORIGINAL DRAWING - DO NOT SCALE DRAWING

B	ISSUED FOR REGULATORY APPROVAL	24.05.18	MJV	MJV/P.Sm.		TG		TG
A	ISSUED FOR COMMENT	15.09.17	MJV	MJV		TG		DE
REV	AMENDMENT / REASON FOR ISSUE	DATE	DES.	DWN.	DWGCHK	VERIFIED		APPROVED
LOCATION PLAN & DRAWING SCHEDULE								
SHEET SIZE	SCALE:	FILENAME:			JOB NUMBER		SHEET NUMBER	REVISION
A1	AS SHOWN	20160166_5_LOCATION PLAN.DWG			20160166.5		01	B

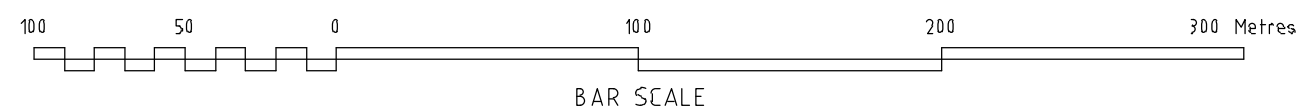


NOTES

1. PROPOSED CAP COMPOSITION AND CONSTRUCTION METHODOLOGY TO BE CONSISTENT WITH STAGE 1 & 2 AND EXISTING APPROVALS.
2. DISTURBANCE TO EXISTING CAP TO BE MINIMISED DURING CONSTRUCTION OF PROPOSED CAP.
3. LANDFILL FOOTPRINT TO REMAIN UNCHANGED.
4. COORDINATES ARE BASED ON A PLANE GRID REFERENCED TO PSM 5061, THE COORDINATES OF WHICH ARE IN MAP GRID OF AUSTRALIA (MGAI) DATUM
5. LEVELS ARE TO AUSTRALIAN HEIGHT DATUM (AHD).
6. EXISTING LEVELS ARE BASED ON GPS SURVEY.

LEGEND

SYMBOL	DESCRIPTION
	MINOR LEVEL (NEW)
	MAJOR LEVEL (NEW)
	PROPOSED RAISED CAP
	EXISTING CAP



THIS DRAWING IS TO BE VIEWED IN COLOUR AS SOME FEATURES / SYMBOLS ARE DIFFERENTIATED BY COLOUR. DRAWING NOT TO BE RELIED ON IF PRINTED IN GREYSCALE.

REV	AMENDMENT / REASON FOR ISSUE	DATE	DES.	DWN.	DWGCHK.	VERIFIED	APPROVED
C	ISSUED FOR REGULATORY APPROVAL	24.05.18	MJV	MJV/P.Sm		TG	TG
B	BATTER SLOPE AMENDED, NOTES ADDED	15.09.17	MJV	MJV		TG	DE
A	ISSUED FOR COMMENT	06.09.17	MJV	MJV		TG	DE

PUBLIC UTILITIES:

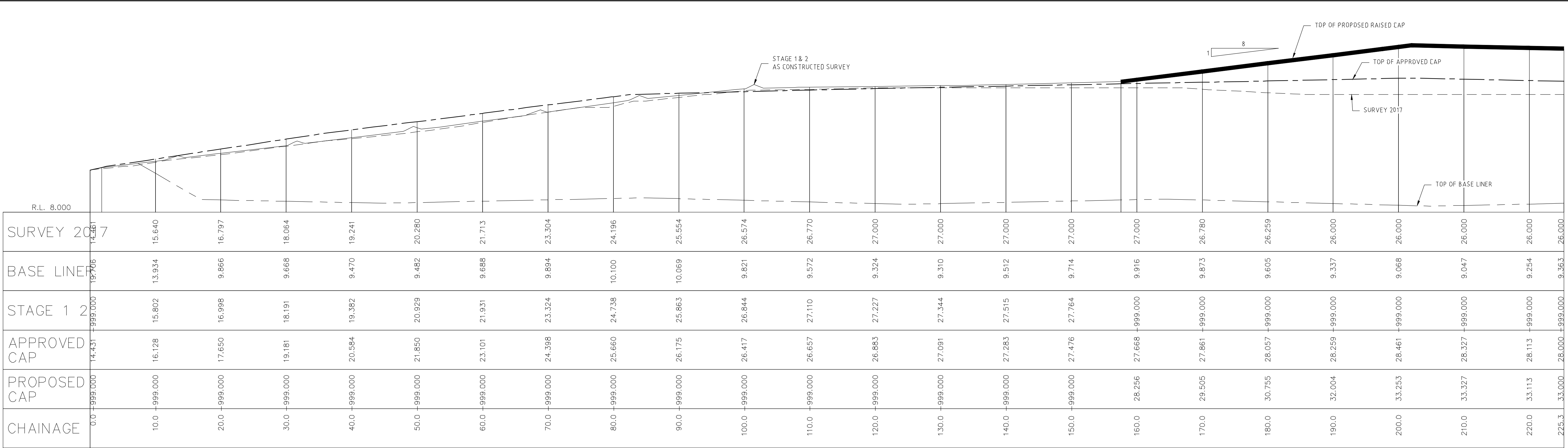
THE SERVICES SHOWN ARE DERIVED FROM PLANS OBTAINED FROM THE RELEVANT SERVICE AUTHORITIES. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ARRANGE WITH THE RELEVANT SERVICE AUTHORITIES FOR CONFIRMATION OF SERVICES AND THEIR LOCATION BEFORE EXCAVATION WORK COMMENCES.



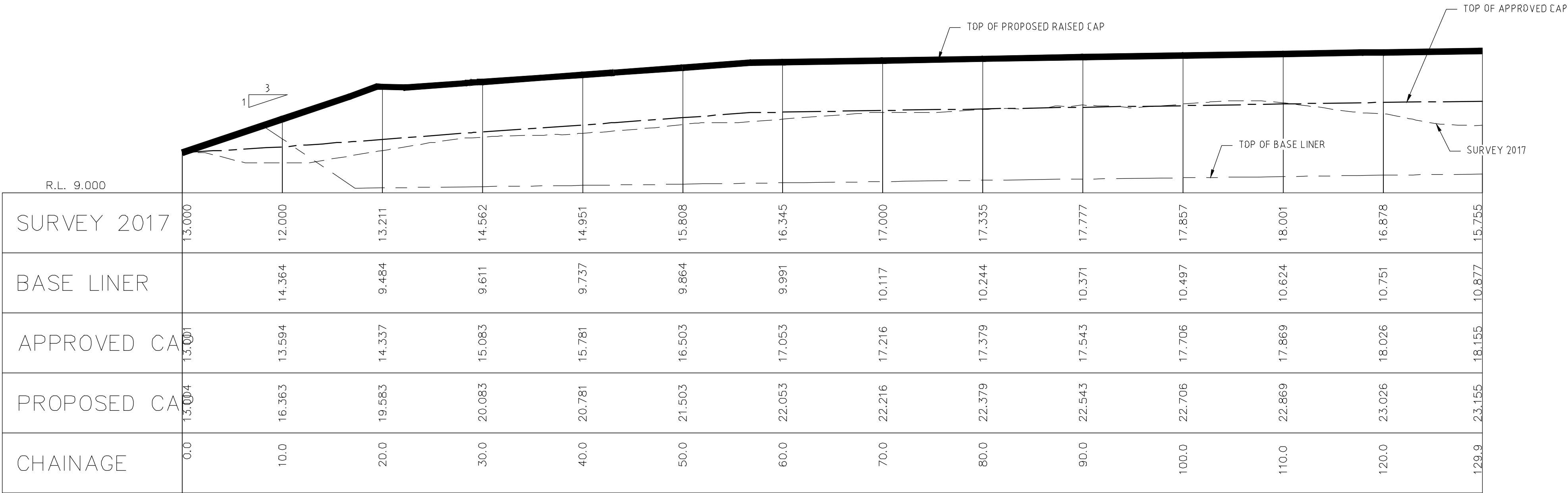
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SHEET SIZE	A1
SCALE:	1:2500
ORIGINAL SURVEY BY	ALEXANDER SYMONDS
SURVEY DATE:	MAY 2017
COORDS & DATUM	COORDS TO (MGA94 ZONE54)
ALL LEVELS TO A.H.D.	

PRELIMINARY			
CLEANAWAY WASTE MANAGEMENT LTD.			
NORTHWARD FILL - PROPOSED RAISED CAP			
TOP OF CAP - CONTOURS			
FILENAME:	JOB NUMBER	SHEET NUMBER	REVISION
20160166_NEW CAP.DWG	20160166.5	02	C



LONGITUDINAL SECTION A
SCALE 1:300 HORIZ
1:300 VERT.



LONGITUDINAL SECTION B
SCALE 1:300 HORIZ
1:300 VERT.

NOTES

1. MAXIMUM POST SETTLEMENT CAP HEIGHT IS EXPECTED TO BE 32m AHD.

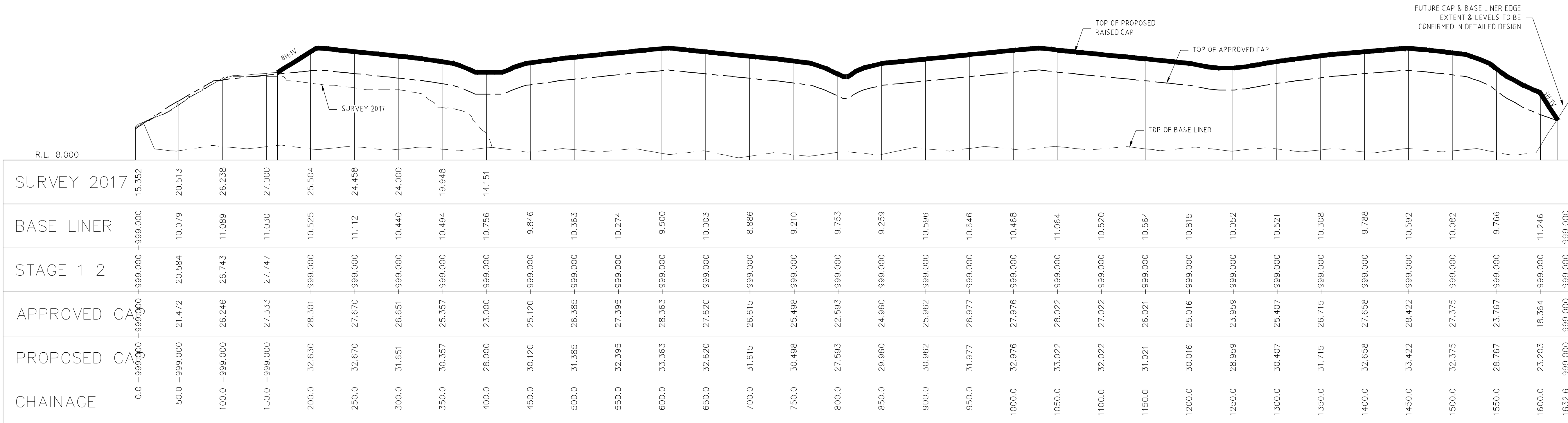
THIS DRAWING IS TO BE VIEWED IN COLOUR AS SOME FEATURES / SYMBOLS ARE DIFFERENTIATED BY COLOUR. DRAWING NOT TO BE RELIED ON IF PRINTED IN GREYSCALE.

REV	AMENDMENT / REASON FOR ISSUE	DATE	DES.	DWN.	DWGCHK.	VERIFIED	APPROVED
C	ISSUED FOR REGULATORY APPROVAL	24.05.18	MJV	MJV/P.Sm		TG	TG
B	BATTER SLOPE AMENDED, NOTES ADDED	15.09.17	MJV	MJV		TG	DE
A	ISSUED FOR COMMENT	06.09.17	MJV	MJV		TG	DE

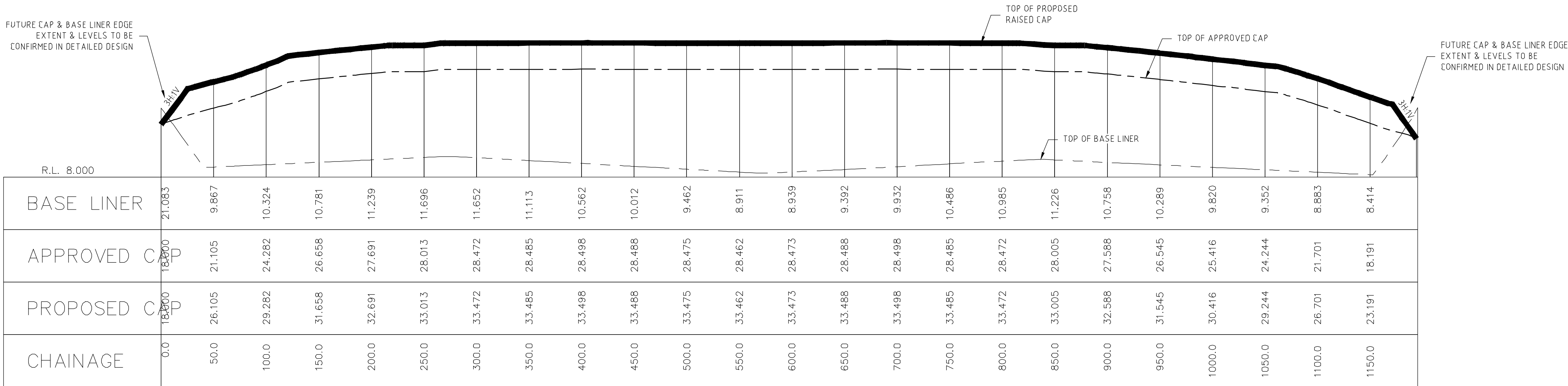
PUBLIC UTILITIES:
THE SERVICES SHOWN ARE DERIVED FROM PLANS OBTAINED FROM THE RELEVANT SERVICE AUTHORITIES. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ARRANGE WITH THE RELEVANT SERVICE AUTHORITIES FOR CONFIRMATION OF SERVICES AND THEIR LOCATION BEFORE EXCAVATION WORK COMMENCES.



PRELIMINARY			
CLEANAWAY WASTE MANAGEMENT LTD.			
NORTHWARD FILL - PROPOSED RAISED CAP			
SECTION A-A AND B-B			
SHEET SIZE	A1	JOB NUMBER	20160166.5
SCALE: 1:300		SHEET NUMBER	03
ORIGINAL SURVEY BY	ALEXANDER SYMONDS	REVISION	C
SURVEY DATE: MAY 2017			
COORDS & DATUM	COORDS TO (MGA94 ZONE54)		
ALL LEVELS TO A.H.D.			



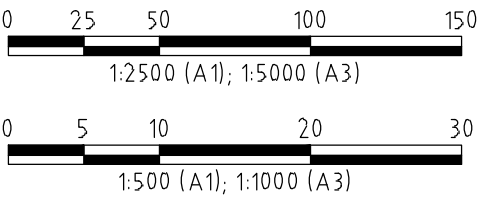
LONGITUDINAL SECTION C
SCALE 1: 2500 HORIZ.
1: 500 VERT.



LONGITUDINAL SECTION D
SCALE 1: 2500 HORIZ.
1: 500 VERT.

NOTES

1. DRAWING SCALES ARE EXAGGERATED TO ASSIST THE VISUAL REPRESENTATION. REFER TO SCALE BARS FOR EACH SECTION.
2. MAXIMUM POST SETTLEMENT CAP HEIGHT IS EXPECTED TO BE 32m AHD.



THIS DRAWING IS TO BE VIEWED IN COLOUR AS SOME FEATURES / SYMBOLS ARE DIFFERENTIATED BY COLOUR. DRAWING NOT TO BE RELIED ON IF PRINTED IN GREYSCALE.

D	ISSUED FOR REGULATORY APPROVAL	24.05.18	MJV	MJV/P.Sm.		TG	TG
C	BATTER SLOPE AMENDED, NOTES ADDED	15.09.17	MJV	MJV		TG	DE
B	BATTER SLOPES ADDED	08.09.17	MJV	MJV		TG	DE
A	ISSUED FOR COMMENT	06.09.17	MJV	MJV		TG	DE
REV	AMENDMENT / REASON FOR ISSUE	DATE	DES.	DWN.	DWGCHK.	VERIFIED	APPROVED

PUBLIC UTILITIES:
THE SERVICES SHOWN ARE DERIVED FROM PLANS OBTAINED FROM THE RELEVANT SERVICE AUTHORITIES. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ARRANGE WITH THE RELEVANT SERVICE AUTHORITIES FOR CONFIRMATION OF SERVICES AND THEIR LOCATION BEFORE EXCAVATION WORK COMMENCES.



SHEET SIZE	A1	PRELIMINARY			
SCALE:	1:2500 HORIZ. 1:500 VERT.	CLEANAWAY WASTE MANAGEMENT LTD.			
ORIGINAL SURVEY BY	ALEXANDER SYMONDS	NORTHWARD FILL - PROPOSED RAISED CAP			
SURVEY DATE:	MAY 2017	SECTION C-C & D-D			
COORDS & DATUM	COORDS TO (MGA94 ZONE54) ALL LEVELS TO A.H.D.	FILENAME:	JOB NUMBER	SHEET NUMBER	REVISION
		20160166_NEW CAP.DWG	20160166.5	04	D


Appendix E

Viewshed Analysis Figures



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Legend

-  Photo Points
-  Roads
-  New Cap Design (2017)

0 100 200 300 400 m
Scale: 1:15,000



CLEANAWAY

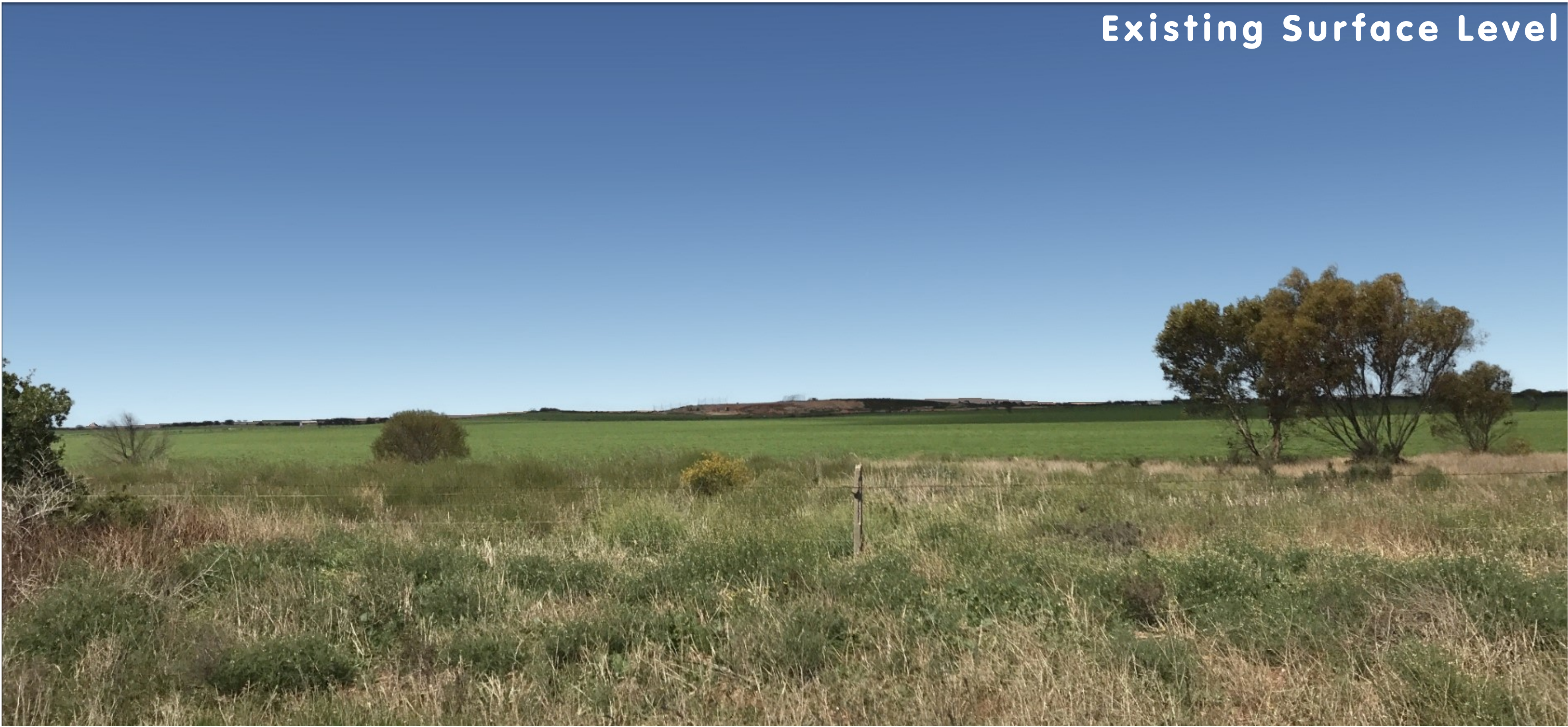


Original Page Size: A3
Job Number: 20160166
Filename: 20160166GQ001
Revision: RevA
Date: 2017-11-20
Drawn: James Paull
Data: Base Imagery from ESRI World Imagery Baseap, 2017. Roads from DataSA, 2017

INKERMAN LANDFILL LOCATION OF PHOTO VIEW POINTS

INKERMAN LANDFILL—Looking South East from Inkerman Road 1

Existing Surface Level



Old Cap Design



New Cap Design



INKERMAN LANDFILL—Looking North East from Prime Road 2

Existing Surface Level



Old Cap Design



New Cap Design



INKERMAN LANDFILL—Looking West from Prime Road 3

Existing Surface Level



Old Cap Design



New Cap Design



INKERMAN LANDFILL—Looking South West from Prime Road 4

Existing Surface Level



Old Cap Design



New Cap Design



Appendix F

Local Community Consultative Committee Meeting Minutes and Submissions

Note: Personal details have been removed from submissions for confidentiality reasons

Northward Fill Landfill Community Consultation Committee Meeting 30 November 2017

Date:	30/11/2017	Chair:	Rob Rodenburg
Time:	5.30 pm – 7.00 pm	Facilitator:	Cleanaway
Venue:	Inkerman Landfill		
Objectives:	Present option to raise cap 5m		
Attendees:	Thomas Gallasch, Amy Tucker (Tonkin Consulting) Jill Stewart, Sue Mudge, Lloyd Mudge, Danielle Mudge, Richard Payne, Janet Church, Robin Church Terry Williams (Wakefield Regional Council)		
Apologies:	None		

Minutes

1. Welcome

Chairman thanked the community for their attendance. Described the purpose of the meeting – to provide information on the plan to increase the height of landform by five metres. Information sheet handed to community attendees to read and discuss. Cleanaway will then answer questions.

(twenty-minute break with refreshments)

Chairman gave a vote of thanks to Janet and Robin Church who have moved out of the area, but previously attended the Committee.

Action: Chairman to write a letter to Janet and Robin providing thanks for their efforts on the Committee, countersigned by Cleanaway (Peter Pick)

Chairman invited Ben Quill to give overview of the proposed changes to the landform.

2. Proposed landform height variation

Ben Quill talked through the Information Sheet provided for the attendees to read (attached to minutes).

a. Purpose

Increase in final height of the landform for future cells (no impact on closed, capped revegetated cells). Spoke about the vegetative screening surrounding the landfill site, which will be increased. Final landform will keep the planned shape to be similar to the surrounding sand dunes. Landfill operations will remain the same, with no increase in volume of waste received at the landfill. Revegetation program for closing cells and final landform footprint also remain the same. Litter management processes will be improved using latest techniques from Melbourne Regional Landfill. Leachate liner designs are already sufficiently engineered to meet the increase to the landform height. Constructed cell designs are reviewed by external engineers and the EPA.

Question: Timeframe for vegetative screening improvements?

b. Development Application change process

State Planning Commission (SPC) assesses the proposal. SPC requested Cleanaway discuss proposal with EPA, Council and community. Comments to Cleanaway are invited from the community, to be emailed to Ben Quill (details on Information Sheet) by 9 am 13 December 2017.

Question: What will be the process for the comments to be responded to?

Cleanaway will collate the comments and provide them to the Planning Commission.

Councillor Terry Williams requested the opportunity to take the Information Sheet to the next Wakefield Regional Council meeting on 13 December 2017.

Question: What does Council know about this proposal? Answer:

Cleanaway representatives met with CEO and Development Manager

c. Opportunity to comment

Question: What is the expected lifespan of the landfill with the height increase?

Cleanaway – current life of landfill at existing filling rate is 2050, height increase may extend the life by 10 years.

Question: Will Cleanaway not consider digging the landfill deeper?

Cleanaway – the height increase reduces the immediate need to deepen the landfill. Landfill technology is constantly changing, the state government wants to move away from landfill. Impending landfill levy will reduce the demand for landfills over time.

Question: if Cleanaway needs to dig deeper, there is an experimental coal pit at Bowmans, we don't want a repeat of the dewatering efforts failed.

Cleanaway – site development will be considered in the context of the market, technology and regulatory environment at the time.

Question: Are there groundwater monitoring wells and how often are they monitoring?

Cleanaway – monitoring every six months with no known impact on groundwater from landfill.

Question: If the landfill cells go up, will the cover every day be the same?

Cleanaway – landfill operations will remain the same.

Question: Issue of birds?

Cleanaway – DEWNR recently reviewed the number/type of birds on the site. DEWNR does not believe that there is a significant impact from the number of birds on site. The increased landform height will not change the daily operations with daily covering etc. Should therefore have no impact on the birds.

Question: When will Cleanaway submit the application?

Cleanaway – 13 December due to government process and shutdown as result of Christmas/election.

Question: Will the questions from the community be responded to?

Chairman – the process does not allow individual responses. Cleanaway – if responses raise relevant issues and questions, Cleanaway will endeavour to respond to them.

Question: The original LEMP states the final landform height at 27m, how does this affect the licence?

Cleanaway (Tonkin) – Cleanaway will update the LEMP to reflect the landform height change. The licence does not require change as the height change is not a change to the existing operations (eg change of waste type). The LEMP is regularly reviewed. Chairman outlined process being undertaken for the development application variation.

Question: What strategies will be put in place to improve existing litter situation (once nets were removed, litter has increased, showing that they were effective).

Cleanaway – will be trialling system in place in Melbourne Regional Landfill, which is effective in managing litter in a high wind area. The system involves moveable nets. Noted the two litter events in the last two months, which occurred during very high winds. Improvements to landfill operations will continue to be made.

Question: What happens after comments received from community?

Cleanaway – the submissions from the community, EPA, Council will be collated and provided to the Planning Commission.

Councillor Terry Williams will speak with staff at Council and notify them on attendance at this meeting. Recommends engaging with other Councillors.

Question: Who makes decision on approving the landform height increase (ie objections from community/council).

State Planning Commission makes decision, based on the responses they receive, including the responses from community, as invited by Cleanaway.

Question: After decision from planning commission, how will the community be informed?

Cleanaway – after the decision has been made, the community will be informed.

Chairman invited attendees to include the issues/concerns that they may have in their responses that have been invited, eg litter.

Question: Will the revegetation timeframes be provided to community?

Cleanaway – will provide updates on vegetation program to community (ACTION) Cleanaway have a new staff member who will be responsible for the vegetative screening program.

Community can assist with watering of new plantings – did this in the past.

3. Other Business

Chairman – Cleanaway is reviewing how the community committee operates. Cleanaway is planning on adopting the community committee approach that is used in Melbourne as a national approach. Information will be provided in the New Year.

Chairman – invited attendees to provide feedback on the information provided at meeting.

Peter Pick – thanked attendees for coming to meeting and provide input.

CLOSE: 7pm

Summary of Actions arising from the Meeting:

1. Chairman to write a letter to Janet and Robin providing thanks for their efforts on the Committee, countersigned by Cleanaway (Peter Pick)
2. Develop program for vegetative screening and inform community.
3. Information on the new approach to the LCCC to be provided to the community at the next meeting.

Summary of Questions:

Question	Response Provided at the Meeting
1. Timeframe for vegetative screening improvements?	To be provided (action above)
2. What will be the process for the comments to be responded to?	Cleanaway will collate the comments and provide them to the Planning Commission.
3. What does Council know about this proposal?	Cleanaway representatives met with CEO and Development Manager.
4. What is the expected lifespan of the landfill with the height increase?	Current life of landfill at existing filling rate is 2050, height increase may extend the life by 10 years.
5. Will Cleanaway not consider digging the landfill deeper?	The height increase reduces the immediate need to deepen the landfill. Landfill technology is constantly changing; the state government wants to move away from landfill. Impending landfill levy will reduce the demand for landfills over time.

Question	Response Provided at the Meeting
6. If Cleanaway needs to dig deeper, there is an experimental coal pit at Bowmans which failed, why risk this?	Site developments will be considered in the context of the market, technology and regulatory environment at the time.
7. Are there groundwater monitoring wells and how often are they monitoring?	Monitoring every six months with no impact on groundwater from landfill.
8. Issue of birds?	DEWNR recently reviewed the number/type of birds on the site. DEWNR does not believe that there is a significant impact from the number of birds on site. The increased landform height will not change the daily operations with daily covering etc. Should therefore have no impact on the birds.
9. When will Cleanaway submit the application?	13 December 2017 due to government process and shutdown as result of Christmas/election.
10. Will the questions from the community be responded to?	Chairman – the process does not allow individual responses. Cleanaway – if responses raise specific issues and questions, Cleanaway will endeavour to respond to them.
11. The original LEMP states the final landform height at 27m, how does this affect the licence?	Cleanaway will update the LEMP to reflect the landform height change. The licence does not require any change as the height variation is not a change to the existing operations (eg change of waste type). The LEMP is regularly reviewed. Chairman outlined process being undertaken for the development application variation.
12. What strategies will be put in place to improve existing litter situation (once nets were removed, litter has increased, showing that they were effective). .	Cleanaway will be trialling system in place in Melbourne Regional Landfill, which is effective in managing litter in a high wind area. The system involves moveable nets. Noted the two litter events in the last two months, which occurred during very high winds. Improvements to landfill operations to reduce litter issues will continue to be made.
13. What happens after comments received from community?	The submissions from the community, EPA, Council will be collated and provided to the Planning Commission.
14. Who makes decision on approving the landform height increase (ie objections from community/council)?	State Planning Commission makes decision, based on the responses they receive, including the responses from community, as invited by Cleanaway.
15. After decision from planning commission, how will the community be informed?	The community will be informed after the decision has been made by the SPC.
16. Will the revegetation timeframes be provided to community?	Cleanaway will provide updates on vegetation program to community (refer actions). Cleanaway have a new staff member who will be responsible for the vegetative screening program.

[REDACTED]
[REDACTED]
Port Wakefield
S.A 5550
[REDACTED]

Benjamin Quill
412 Hanson Road
Wingfield
S.A 5013

To whom it may concern,

We are writing in response to the changes Clean Away want to make to the landfill at Inkerman, following the meeting held at the landfill on Thursday the 30th November.

They have purposed changing the height of the cells to 32 meters as to what it is now which is 27. We are not opposed to them building up, in fact, we are content with the idea, and it's far better than digging down into or near the water table which greatly concerns us. We have previously expressed our concern of this to Clean Away, but they cannot and will not guarantee this is not on the cards in the future. If the landfill changes are granted we do have a few concerns about the litter, new net system, cell cover, birds and noise which we would like to see noted in the new terms to ensure that every effort is made to control this with the new elements conditions.

We are happy to be contacted to discuss it with you further if necessary.

Regards,

[REDACTED]
8/12/2017

[REDACTED]

ATTENTION
Mr Benjamin Quill
412 Hanson Road,
Wingfield. S.A.5013

**Inkerman Waste Management Facility Northward Fill
Cleanaway's Proposal on Development Authorisation Changes**

Submission

Overview

A request was made to the chairperson for a special meeting to be held 30th November 2017 to discuss options previously floated and how Cleanaway plan to operate the facility in the future. At this time a plan would be tabled for which Cleanaway would request community input, with this input to be addressed and carried forward to the DAC.

As part of Cleanaway's commitment to the community they are inviting comments from the Northward Fill Community Consultative Committee in relation to the proposal. For comments to be considered submissions to Benjamin Quill, Email:- Inkerman.Landfill@cleanaway.com.au (See Cleanaway Information Sheet)

Points to consider: -

Process

1. The LCCC has only 1 community member & 1 temporary WRC councillor the other 4 are all Cleanaway paid staff or contractors. Where does this leave the community?
2. Under what policies or criteria of SAPC does this process follow to allow it to be considered a minor change in development without public consultation?
3. This ill-timed meeting nor the main reason for it showed no commitment to the community or their livelihood's. (Middle of harvest and heavy rain forecast. (Get real guys.)
4. Normally comments go direct to the SAPC or EPA and names can be kept confidential. Why is this not happening?

Disposal of Waste at a higher Height

1. The Inkerman community is becoming very upset at the lack of the facility to safely dispose of waste. With litter wind blown 100's metres off site on to farming land and cattle grazing lands due to lack of daily cover and containment of waste. How much further will it travel at the increased height?
-

2. Odour is a problem for neighbouring residents. *See Licence no. 144463 Section 1.3*
3. Since the lack of suitable netting birds are a problem affecting farms and residents.
4. How will these and dust, be managed at a greater height?

Visual Amenity

1. Although it may be difficult to notice the height increase from a distance. Page 2 of 2 Info Sheet. In reality this seems the opposite. Travelling adjacent roads where perimeter trees have grown it is difficult to see the landfill. However from a distance it is easily seen and in the winter the main light which comes on at 6am can disturb others. How much more prominent will this be at 32 AHD?
2. (See photo my view every day)

Litter

1. **This issue must be addressed immediately and prior to any changes.**
Cleanaway is under licence to cover and control litter. If this cannot be contained any added height will only increase the problem. What is it with authorities they cannot understand about animals eating plastic and fouling machinery or biosecurity risk to the environment and community? *See Licence no.14463 Section 2. & 3.5.*

Capabilities of the cell Construction

1. The added pressure of the height increase.
What effect on the base liner, leachate systems, gas, stormwater collection or any other cell's internal/external infrastructure to operate effectively?
Volume 1 Landfill Environment Management Plan 17/3/2000 Page 56 of 109 Section 7.2.2
Settlement over time to 27AHD will ensure that the approved final drainage contours are achieved. Can these still be achieved at 32m AHD?
Is there an engineer's report on the effect of the additional height to the landfill cell internal and external structures?

Weather

1. Has a study or report been done regarding expected winds speed at a greater height and the ability of any containment structures to manage litter, dust and birds.?

Summary

Whilst the raising of the height of the landfill is preferable to lowering the base into the water table, it must be engineered and appropriately managed. With guarantees that the problem of litter, birds, dust and odour are address in a professional manner and the landfill height not exceed 32m AHD.

It is noted that: Distribution of problems by principal human factor contributing to problems in landfilling are: Design 51%, Construction 35%, Operation 14%.

Ref. Assessment and Recommendations for Improving the Performance of Waste Containment Systems EPA USA.

Can these problems in the case of Inkerman be over-come?

View 6/12/2017 of Inkerman landfill from ~~Old Kallora Farm~~

